The OIL AND GAS JOURNAL

FEB 23

40

ODUCING

FINING

ATURAL
ASOLINE

PELINE

ARKETING

WE COVER
THE WATERFRONT
Goodhope
[New Orleans]
Houston
STA-VOL-ENE
STABILITY VOLATILITY ENERGY
IT'S A "NATURAL"
Our stabilized Natural Gasoline of high octane and high volatility available for cargo and part cargo shipment to all ports of the world from our terminals, Goodhope (New Orleans) La. and Houston, Texas.
A QUARTER OF A CENTURY
IN THE NATURAL GASOLINE INDUSTRY

Hanlon-Buchanan, Inc

PIONEER NATURAL GASOLINE MANUFACTURER

EXPORT TERMINALS:
Goodhope, La.
Houston, Tex.

TULSA, OKLAHOMA
NATIONAL BANK OF TULSA BUILDING
PHONE 4-1101 or L.D. 398 WIRE—OR WRITE P.O. BOX 1559
Cable Address . . . STAVOLENE, Tulsa, U. S. A.

FOREIGN REPRESENTATIVE:
Barks, Williams & Co., Ltd.
4 Lloyd's Ave.
London, England

TULSA, OKLAHOMA FEBRUARY, 21, 1935

CATERPILLAR

REG. U. S. PAT. OFF.

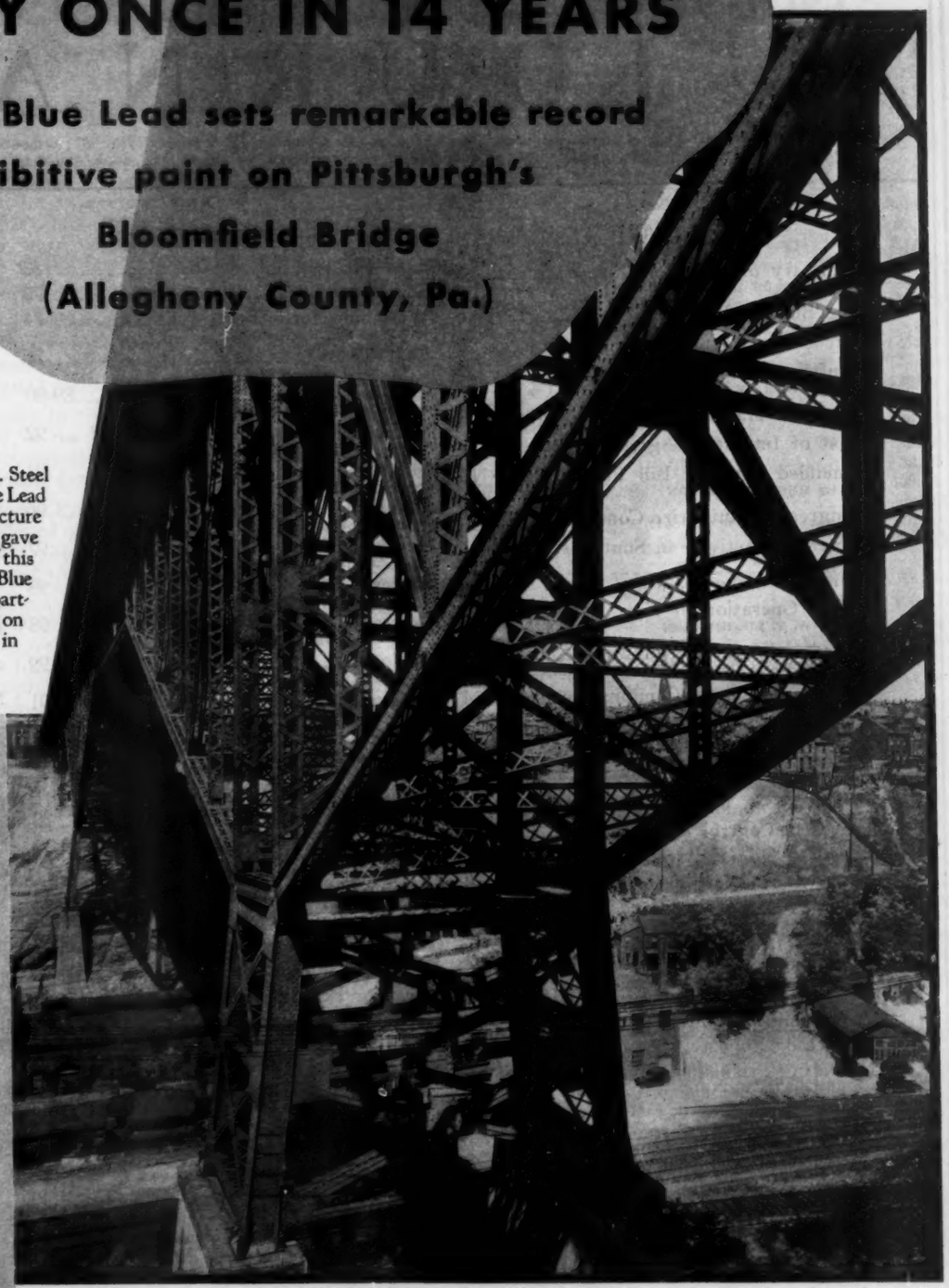
D I E S E L

AT HIGH ISLAND, Texas, the Yount Lee Oil Co. uses a wide-gauge "Caterpillar" Diesel Tractor for derrick construction. In the oil fields, around the refineries, on the pipe lines, wherever cheap, sure power is needed, "Caterpillar" Diesels have a hundred and one uses.

Call for the Show-Down on the power question. Get the proof of the ability of "Caterpillar" Diesel Tractors—and Engines—to cut your costs. Learn why these machines are setting low-cost power records for the industry. Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

REPAINTED ONLY ONCE IN 14 YEARS

Eagle Sublimed Blue Lead sets remarkable record as rust-inhibitive paint on Pittsburgh's Bloomfield Bridge (Alleghony County, Pa.)



● The Bloomfield Bridge, built in 1913. Steel given priming coat of Eagle Sublimed Blue Lead at the mill, and two more coats after structure was completed. This long-wearing paint gave good service for 14 years! On the basis of this remarkable performance, Eagle Sublimed Blue Lead is now extensively used by the Department of Highway Bridges and Tunnels on the steel maintenance of 350 bridges in Allegheny County.

A More Enduring Rust-Inhibitive Paint

Here's why more and more engineers every year are recommending Eagle Sublimed Blue Lead as the most efficient rust-inhibitive paint for all metal surfaces:

1 Being pure lead, it is more enduring—gripping metal surfaces tenaciously. Does not chip or peel.

2 Being of extremely fine particles, it stays in suspension. Doesn't harden in container or clog the spraying nozzle. Equally satisfactory for brushing, spraying or dipping.

3 Chemically stops corrosion because of great basicity.

4 Brushes easily, flowing out like enamel. Painters like it.

5 Offers greatest economy. Lower in first cost than other high grade metal paints. Greater coverage—600 to 800 square feet per gallon. Saves 40 to 50% in material cost. Long lasting.

● You can buy Sublimed Blue Lead in paste form (pure lead ground in pure linseed oil) under the Eagle label—or in ready mixed form from reputable manufacturers. Send for descriptive booklet and free sample.

EAGLE RED LEAD
Rapid-drying qualities make it ideal for rush jobs.

EAGLE *Sublimed* BLUE LEAD
BASIC SULPHATE OF LEAD BLUE

MAIL COUPON FOR FREE SAMPLE
The Eagle-Picher Lead Company, Dept. 062, Cincinnati, O.
Please send me free sample of Sublimed Blue Lead—also descriptive booklet on this more efficient rust-inhibitive paint.

Name_____
Address_____
City_____ State_____

CATERPILLAR

REG. U. S. PAT. OFF.

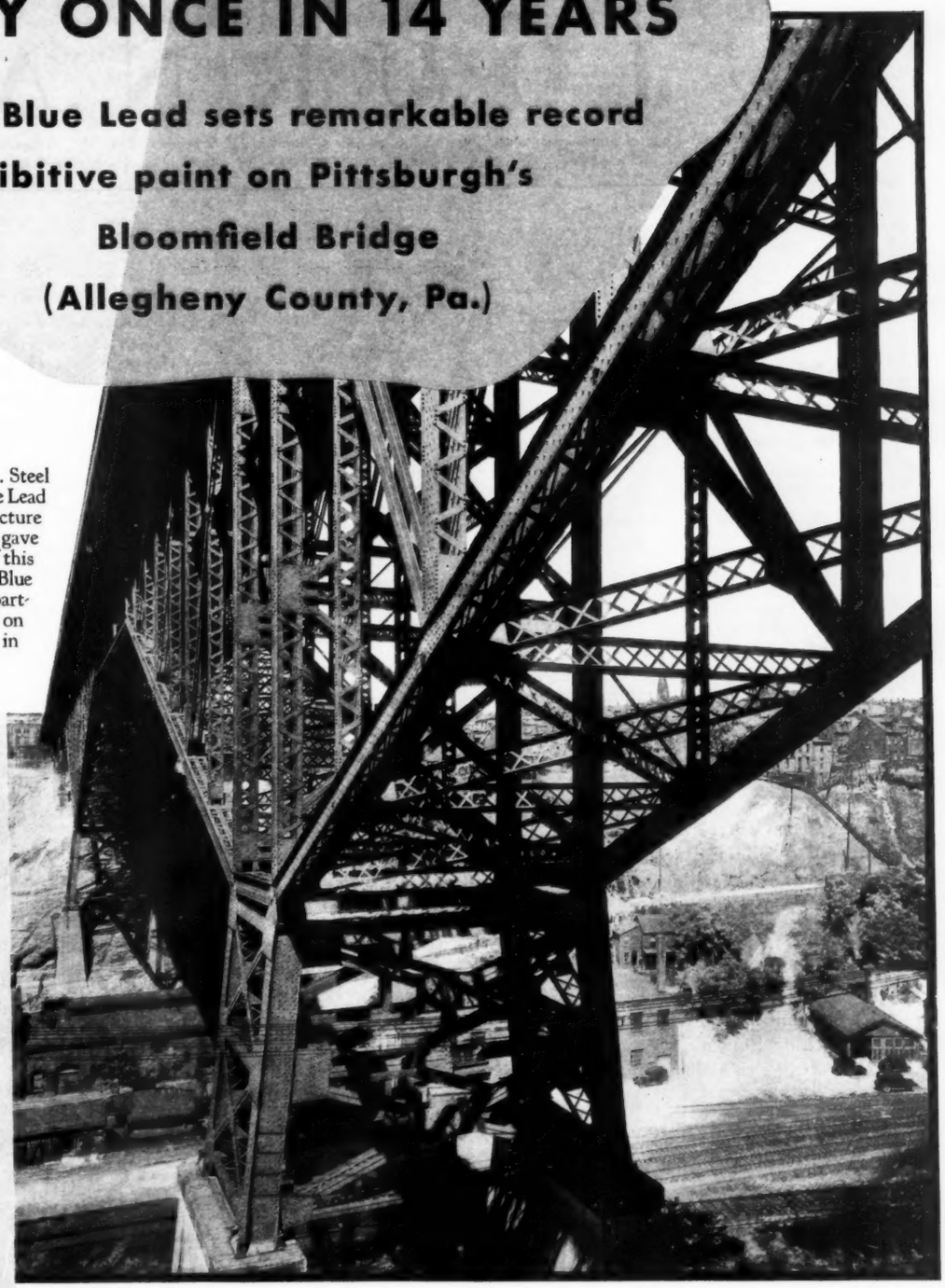
DIESEL

AT HIGH ISLAND, Texas, the Yount Lee Oil Co. uses a wide-gauge "Caterpillar" Diesel Tractor for derrick construction. In the oil fields, around the refineries, on the pipe lines, wherever cheap, sure power is needed, "Caterpillar" Diesels have a hundred and one uses.

Call for the Show-Down on the power question. Get the proof of the ability of "Caterpillar" Diesel Tractors—and Engines—to cut your costs. Learn why these machines are setting low-cost power records for the industry. Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

REPAINTED ONLY ONCE IN 14 YEARS

Eagle Sublimed Blue Lead sets remarkable record as rust-inhibitive paint on Pittsburgh's Bloomfield Bridge (Allegheny County, Pa.)



● The Bloomfield Bridge, built in 1913. Steel given priming coat of Eagle Sublimed Blue Lead at the mill, and two more coats after structure was completed. This long-wearing paint gave good service for 14 years! On the basis of this remarkable performance, Eagle Sublimed Blue Lead is now extensively used by the Department of Highway Bridges and Tunnels on the steel maintenance of 350 bridges in Allegheny County.

A More Enduring Rust-Inhibitive Paint

Here's why more and more engineers every year are recommending Eagle Sublimed Blue Lead as the most efficient rust-inhibitive paint for all metal surfaces:

1 Being pure lead, it is more enduring—gripping metal surfaces tenaciously. Does not chip or peel.

2 Being of extremely fine particles, it stays in suspension. Doesn't harden in container or clog the spraying nozzle. Equally satisfactory for brushing, spraying or dipping.

3 Chemically stops corrosion because of great basicity.

4 Brushes easily, flowing out like enamel. Painters like it.

5 Offers greatest economy. Lower in first cost than other high grade metal paints. Greater coverage—600 to 800 square feet per gallon. Saves 40 to 50% in material cost. Long lasting.

● You can buy Sublimed Blue Lead in paste form (pure lead ground in pure linseed oil) under the Eagle label—or in ready mixed form from reputable manufacturers. Send for descriptive booklet and free sample.

EAGLE RED LEAD
Rapid-drying qualities make it ideal for rush jobs.

EAGLE *Sublimed* BLUE LEAD
BASIC SULPHATE OF LEAD BLUE

MAIL COUPON FOR FREE SAMPLE
The Eagle-Picher Lead Company, Dept. 0oz, Cincinnati, O.
Please send me free sample of Sublimed Blue Lead—also descriptive booklet on this more efficient rust-inhibitive paint.

*Name*_____
*Address*_____
*City*_____ *State*_____

THE OIL AND GAS JOURNAL

Volume 33
Number 40

February 21, 1935

SUBSCRIPTION RATES: Domestic, 1 year, $6; 6 months, $3. Canadian and foreign, 1 year, $7; 6 months, $3.50. All subscriptions payable in advance. When extra copies of special issues are available they are reserved for subscribers' needs and may be bought by subscribers at 50 cents each

SPECIAL ARTICLES

Summary of Situation ---- 5
By JAMES McINTYRE
The Bulletin Board ---- 6
Circus Stuff for Congress (Cartoon) ---- 7
Conference Approves Compact ---- 8
By ANDREW M. ROWLEY
Governor Marland Sounds Keynote ---- 8
Text of Interstate Agreement ---- 9
Amended Connally Bill Passes House 10
By HUGH D. MALLON
Congress to Authorize Compact ---- 10
Increasing Activity in Southeast Oklahoma ---- 11
By L. G. E. BIGNELL
Initial Operation of New Dubbs Unit 12
By W. T. ZIEGENHAIN
Trend of World Consumption ---- 13
By V. R. GARFIAS and R. V. WHETSEL
Atlantic Completes Combination Unit ---- 14
By C. O. WILLSON
Overproduction Increases in East Texas 15
By L. E. BREDBERG
Surface Methods as Productive as Mining ---- 16
By W. L. HORNER
States in Control (Editorial) ---- 18
Owed to Oil (Editorial) ---- 18
Progress at Washington ---- 18
News From Foreign Lands ---- 20
Revised Definition of "Employe" ---- 32
The Fitts Pool, Oklahoma ---- 33-69
Confidence Led to Discovery ---- 39
By T. F. SMILEY
Ownership Map, Fitts Pool ---- 40
Service on Pontotoc County Fields ---- 45
Operating Problems in Fitts Area ---- 54
By L. G. E. BIGNELL
Development Record, Fitts Pool ---- 69
Installation of Steam Fire Lines ---- 70
By W. T. GETTINGS
Pechelbronn Operations ---- 83
Electric Power in Refineries ---- 84
Controlled Drilling Increasing ---- 87
By NEIL WILLIAMS
Field Problems From Readers ---- 109
Edited by T. F. SMILEY

FIELD OPERATIONS

Late Fields ---- 32
Southwest Texas ---- 73
West and North Texas ---- 74
By L. E. BREDBERG
East Texas ---- 76
By L. E. BREDBERG
Gulf Coast ---- 89-90
By F. L. SINGLETON
N. Louisiana-Arkansas, Mississippi ---- 92
By J. R. CRUMPTON
Oklahoma ---- 93
By JAMES McINTYRE
Michigan ---- 96
By PAUL A. ELLIOTT
Kansas ---- 97
By JAMES McINTYRE
Eastern Fields ---- 98
By STAFF CORRESPONDENT
Central West ---- 98
By GEORGE A. WHITNEY
California ---- 99
By L. P. STOCKMAN
Rocky Mountain Area ---- 101
By TOLBERT R. INGRAM
Canada ---- 101
By VICTOR LAURISTON

REFINING AND MARKETING

Group 3 Market ---- 22
By T. F. SMILEY
New York Market ---- 23
By C. O. WILLSON
A.P.I. Refinery Report ---- 23
Refinery and Crude Oil Prices ---- 24-25
Tank Wagon Markets ---- 26
News for Sales Departments ---- 27
News for Petroleum Refiners ---- 28
Natural Gasoline Manufacture ---- 30
Technical Questions Answered ---- 105
By C. K. FRANCIS, Ph.D.
Chicago Market ---- 107

GENERAL DEPARTMENTS

Natural Gas Developments ---- 106
Record of Oil Securities ---- 108
Do You Remember? ---- 110
Personal Paragraphs ---- 110-111
New Equipment ---- 116-117
Classified Advertising ---- 119
Index to Advertisers ---- 120

Refinery Section Starts on Page 22

OIL MAN'S CALENDAR

March

12—New York, Oil Trades Association of New York, annual meeting, Waldorf-Astoria.
21-23—Wichita, Kans., American Association of Petroleum Geologists, annual meeting.

April

2-3—New York, National Oil Burner Dealers Association, Pennsylvania Hotel.
4-5—Excelsior Springs, Mo., Western Petroleum Refiners Association, annual meeting.
8-13—Houston, Tex., Oil Equipment and Engineering Exposition.
11-13—Dallas, Tex., Petroleum Industry Electrical Association, Baker Hotel.
15-16—Dallas, Tex., American Society Mechanical Engineers, S. W. Students Branch.
22—New York, American Chemical Society, semiannual meeting.
(?)—Wichita, Kans., Kansas Oil Men's Association.

May

1-3—Tulsa, Natural Gasoline Association of America, Hotel Tulsa.
6-9—Memphis, Tenn., Natural Gas Department, A.G.A., Peabody Hotel.
8-11—Tulsa, Oil and Gas Power Division of A.S.M.E., Mayo Hotel.
14-16—Tulsa, American Petroleum Institute, fifth mid-year meeting, Mayo Hotel.

June

20-21—State College, Pa., Pennsylvania Grade Crude Oil Association, annual meeting.
24-28—Detroit, Mich., American Society for Testing Materials, annual meeting, Book Cadillac Hotel.

September

25-27—Atlantic City, National Petroleum Association, annual meeting, Hotel Traymore.

November

4-5—Dallas, Tex., I.P.A.A. annual convention.
11-14—Los Angeles, sixteenth annual meeting, A.P.I., Los Angeles, Biltmore Hotel.

December

(?)—Dallas, Tex., Mid-Continent Oil and Gas Association.

Branch Editorial Offices

WASHINGTON	CHICAGO	DENVER	FORT WORTH	HOUSTON	LOS ANGELES	PITTSBURGH
Hugh D. Mallon	616 S. Michigan Ave.	Tolbert R. Ingram	L. E. Bredberg	Neil Williams	L. P. Stockman	P. O. Box 1344
808 Investment Bldg.		State Office Bldg.	Petroleum Bldg.	809-10 Sterling Bldg.	Union Oil Bldg.	

MUSKEGON	LOUISIANA	TOLEDO	NEW YORK	OIL CITY	CHATHAM, ONT.
Paul A. Elliott	J. R. Crumpton	George A. Whitney	C. O. Willson	R. C. Conine	Victor Lauriston
Chronicle Bldg.	Minden	Box 98, Main P. O.	415 Lexington Ave.	Oil City Derrick	35 Stanley Ave.

Branch Advertising Offices

NEW YORK	CLEVELAND	CHICAGO	LOS ANGELES	HOUSTON
C. L. Cain	Howard Markt	C. R. Farmer	J. H. Tinkham	Paul T. Putnam
415 Lexington Ave.	802 Leader Bldg.	616 S. Michigan Ave.	2941 Raymond Ave.	809-10 Sterling Bldg.

Copyright, 1935, by The Petroleum Publishing Co.

Federal Allowable Exceeded in Several States, With East Texas Field Greatest Offender

By JAMES McINTYRE

THE East Texas field overproduced more than 60,000 bbls. a day in the past week, increasing its daily average production about 23,000 bbls. a day. The whole state of Texas, however, was only 37,563 bbls. over the Federal allowable. Oklahoma increased its output 51,550 bbls. over the previous week, but on an average is below the allowable. California's production was 29,900 bbls. in excess of the Federal allocation. Altogether the United States produced 145,000 bbls. per day in excess of its crude output at the beginning of the month and 90,434 bbls. over the Federal allowable.

Indications of three new pools in Russell County, Kansas, were given when as many wildcats showed oil in considerable volume, one of them producing 359 bbls. on a 24-hour test. The others had not been tested, but are expected to make good wells.

In Oklahoma interest continues to center in the Fitts Pool in Pontotoc County, the largest field opened in the United States in the past two years. Enormous wells are completed weekly only to be pinched to a small fraction of their potential production.

A wildcat well 7 miles north of the Eunice Pool in Lea County, New Mexico gives indications of having opened a new pool. In the Byron Pool in Wyoming the Ohio Oil Co. has what is expected to develop into a big producer in the Tensleep sand. It was close to completion.

In the Gulf Coast field in Texas a new pool is in the making in Southeastern Waller County, the discovery well producing gas and 150 bbls. of 58 gravity distillate per day. A test in the Roanoke field, Jefferson Davis parish, Louisiana indicated production possibilities at a depth of 10,001 feet, the gas pressure from that depth causing the drill pipe to stick, necessitating a fishing job. If it makes a producer it will be the deepest in the world.

Potential production in Michigan has declined to within 10,000 bbls. of the actual daily production, which will necessitate a lively drilling campaign to keep up the state's known reserves.

In California an extension to the Montebello Field, if not an entirely separate pool, in the Los Angeles Basin and a new commercial gas field in Kern County were the high lights of the week's review of that State's operations.

Three new wells were completed in the Rainbow Field in Union County, Arkansas, one of which was good for 800 bbls. per day.

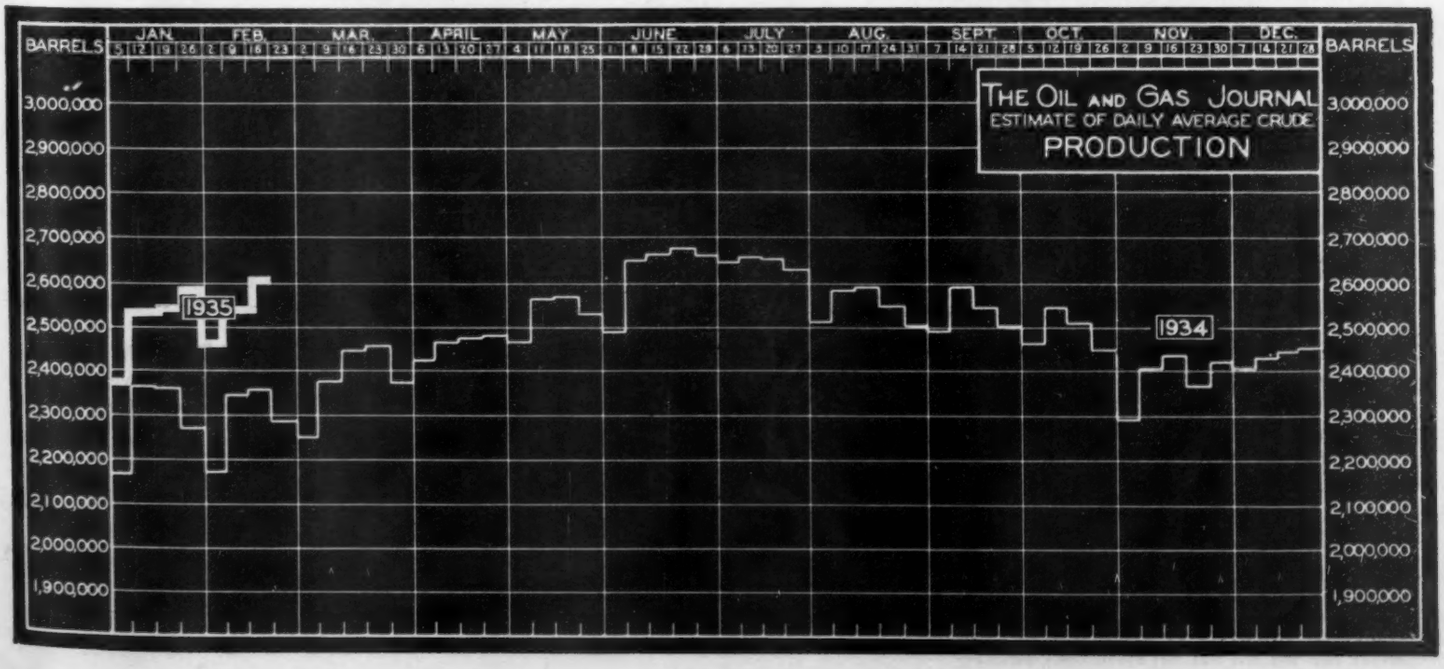
Three discoveries were made in Southwest Texas, in Bee, Jim Wells and Frio Counties, but salt water broke in on two of the tests.

Crude Oil Production in the United States

Estimated daily average production for the week ending February 16 and a comparison with previous week and the Federal allowables follow

		Federal allowable	
Oklahoma—	Feb. 16	February	Feb. 9
Oklahoma City	159,525	.....	130,475
Seminole-St. Louis	98,000	.....	81,675
Remainder of State	249,550	.....	243,375
Total Oklahoma	507,075	497,100	455,525
East Texas—			
Lathrop	170,654	.....	167,310
Kilgore	162,745	.....	158,434
Joiner	155,367	.....	139,764
Total East Texas	488,766	.....	465,508
West Texas	145,002	.....	150,273
North Central Texas	88,620	.....	82,715
Texas Panhandle	61,875	.....	59,125
East Central Texas	51,410	.....	52,274
Gulf Coast—Texas	174,875	.....	175,775
Southwest Texas	58,715	.....	58,675
Total State of Texas	1,069,263	1,031,700	1,044,345
Kansas	139,000	138,600	139,700
North Louisiana	22,895	.....	22,805
Gulf Coast—Louisiana	94,455	.....	91,275
Total Louisiana	117,350	109,500	114,080
Arkansas	31,010	32,000	31,225
Eastern Fields (except Michigan)	102,000	100,700	102,000
Michigan	38,536	30,000	35,817
Rocky Mountain area	93,800	97,900	96,120
California—			
Santa Fe Springs	39,300	.....	39,600
Long Beach	68,000	.....	69,500
Mountain View	14,500	.....	19,500
Elwood	10,500	.....	8,500
Kettleman Hills	64,500	.....	69,250
Remainder of State	321,700	.....	321,400
Total California	518,500	488,600	527,750
Total United States	2,616,534	2,526,100	2,546,562

Increase 69,972 Bbls. Daily.



The Bulletin Board

Nine States Sign interstate compact drafted at governors' conference in Dallas. The action was unanimous. Steps are being taken this week to have legislatures of different states ratify the document which then will be submitted to Congress with the request that consent legislation be enacted.

•

Suppliers of oil are not to be held responsible to labor when hired to work in stations operating under a lease and agency or lease and license agreement in those instances where the supplier does not require the exclusive sale of his oils and does not hold a controlling interest in the property.

•

New Dubbs cracking unit at the Cushing Oil & Refining Co.'s plant at Cushing, Oklahoma has just completed initial runs on gas oil and fuel oil residuum used as charging stock and is being placed on a routine operating schedule this week.

•

Unusually flexible operation permitting work to be done that may be classed as viscosity breaking and reforming with over-all yield of gasoline having an octane value of 70, is attained by Atlantic Refining Co. which has replaced several small distillation units at its Philadelphia refinery with a 20,000-barrel combination topping and cracking unit.

•

Curtailment of gas production in the Panhandle is expected to result from the passage of a law by Texas that will reduce natural gasoline production 50 per cent for the area. The form of the restrictive law and the date of its effectiveness are indeterminate at this time.

•

Peculiar conditions in Gulf Coast fields have led to increasing adaptation of controlled directional drilling.

•

France claims oldest operation for the production and refining of crude oil in the record of the Pechelbronn area.

•

Southwestern Oklahoma counties are getting active play with more than ten tests drilling and many more contemplated as result of Gypsy Oil Co.'s well in granite wash Southeast of Altus, Jackson County. Play likely to extend into four counties.

•

Constant electric service for refining purposes assured by combined ingenuity of electrical, hydraulic and mechanical engineers as demonstrated in West Tulsa unit.

Improper use of steam for fighting an oil fire may actually increase the rate of burning. A definite relationship exists between the size of the steam line required and the size of the tank to be protected.

•

Recovery of oil by surface methods can be as much as could be obtained through mining operations, Bradford research engineer declares.

•

Cole Committee will ask Congress to authorize interstate compact following action at Dallas, according to Chairman Cole who is preparing to complete report on oil investigation.

•

East Texas crude overproduction estimated at 63,000 bbls. Trucks hauling products across line into Louisiana and back as interstate pretext lead to arrests and prosecution.

•

Administrator Ickes completes the membership of the Planning and Coordination Committee by reappointment of President K. R. Kingsbury of the Standard Oil Co. of California, who resigned a year ago.

•

Fitts pool, South of Ada, Pontotoc County, Oklahoma, is the largest field developed in past two years. Record of development and complete details about the field and Ada district will be found in special section, pages 33 to 69.

•

World-wide situation in petroleum industry presented in analysis of production and consumption statistics by V. R. Garfias and R. V. Whetsel.

•

Without seeing compact agreed upon at Dallas conference Administrator Ickes persists in declaring it impossible, maintaining his demand for Federal control.

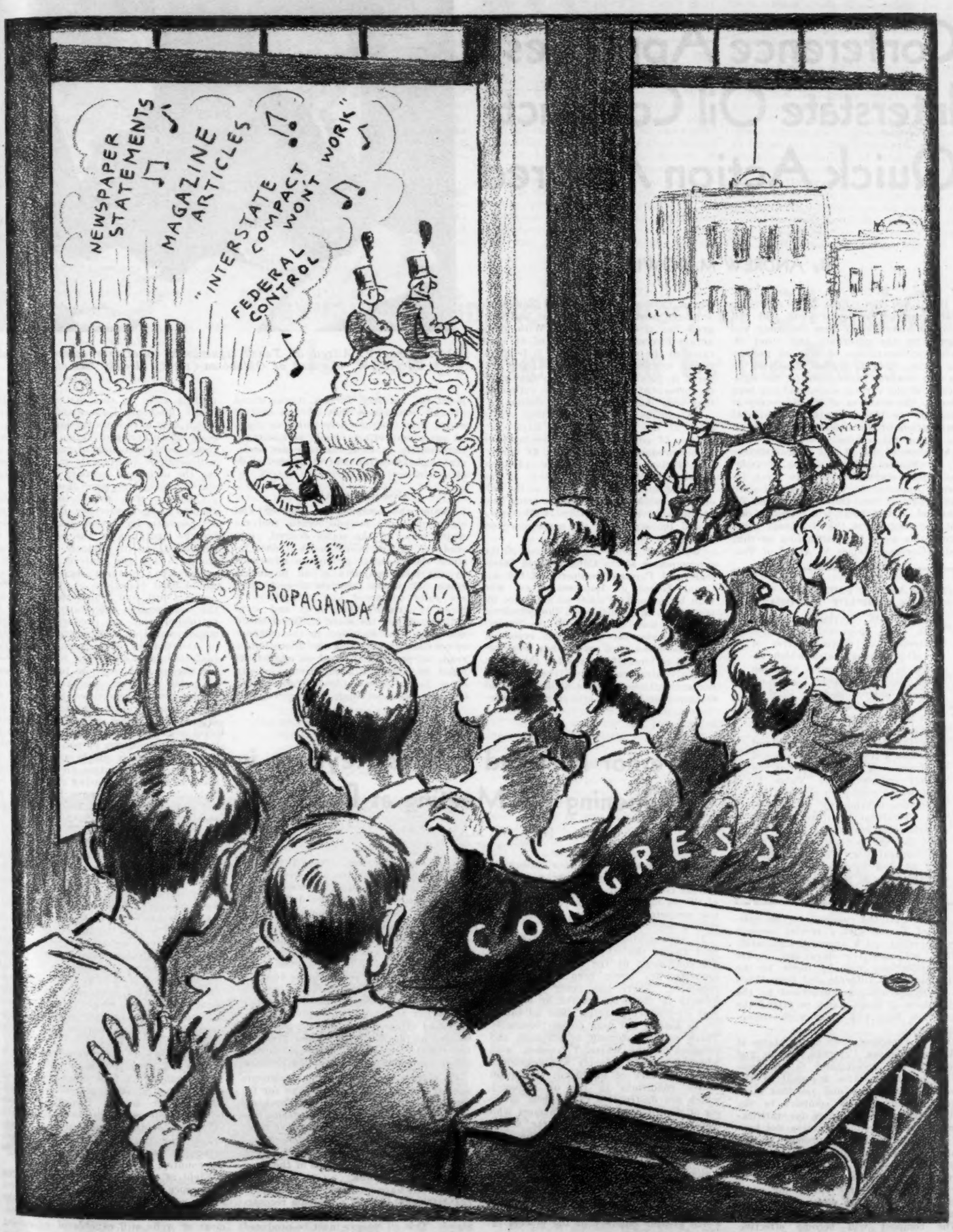
•

House passes amended Connally bill which goes to conference committee on giving the President power to lift prohibition on interstate commerce and provision for confiscating "hot" consignments.

•

Natural gasoline plant operators in the Panhandle of Texas are preparing for the passage of a restrictive law during this session of the state legislature that will equitably curtail the production of natural to as much as 50 per cent of its present volume.

Circus Stuff for Congress



—Drawn exclusively for The Oil and Gas Journal

Conference Approves Interstate Oil Compact; Quick Action Assured

By ANDREW M. ROWLEY

DALLAS, Tex., Feb. 18.—An interstate compact to conserve oil and gas, adopted unanimously here Saturday and signed by the governors and other official representatives of nine oil producing states, is being started this week on its way towards ratification by the legislatures of the various states and has been filed in the archives of the Secretary of State of the United States with official notification to the federal authorities of the action taken here.

Members of the oil and gas committees of the Senate and the House of Oklahoma legislature already have given informal approval to the compact drafted and approved here and Governor E. W. Marland, of Oklahoma will formally submit the compact to the Oklahoma legislature this week for ratification by that body. Governor James V. Allred of Texas will submit the compact to the legislature of Texas, with a special message recommending quick approval and ratification, within a few days and similar recommendations will be made to the legislatures of California and New Mexico by representatives authorized by the legislatures of these states to attend the conference here and make such recommendation.

Official representatives of the states of Arkansas, Kansas, Colorado, Illinois and Michigan will recommend to the governors of these states approval of the compact drafted here and ask that these governors submit this compact to the legislatures of these states for ratification. Other oil producing states, not having had representatives present at the conference held here last week, will be given copies of the compact and a report of the conference and be asked to have their legislatures ratify the compact, if these states desire to become members.

The compact will become effective within those states ratifying it as soon as any three of the states of Oklahoma, Texas, California, Kansas and New Mexico have ratified the document and Congress has given its consent. With quick action forecast on the part of at least three of the states named, it is felt sufficient ratifications will have been procured in plenty of time to have the matter presented to Congress for action by that body during its present session.

Unanimous action by the nine states came at the close of a two days' conference of governors and representatives of oil producing states called by Governor Marland and held in the Adolphus Hotel here Friday and Saturday. It was the third such conference held at the call of Governor Marland, the first being held in his home in Ponca City on December 3 and the second at the same place on January 3.

William P. Cole, Jr., chairman of the subcommittee of the Committee on Interstate and Foreign Commerce of the national House of Representatives, who with his committee made an extensive investigation of conditions in the petroleum industry, was interested in the conference of states here and a full report of the proceedings and results has been forwarded to him. It is expected the action at the conference here will have an important influence on the deliberations of Congress on matters affecting the entire petroleum industry. In fact, it was stated at the conference that if the several states in conference here failed to reach an agreement, efforts would be instituted immediately in Congress to enact stringent legislation for control of the whole oil business.

Essential Provisions

While the compact as adopted and signed does not include certain features which many of the states desired, close study of its provisions shows it does include the essential provisions advocated by the large majority of oil producing states. In it the interests of each state are fully conserved and recognition is given to existing state laws and state policies. While the state of Texas would not permit the inclusion in the compact of provisions permitting the allocation of crude oil production based on market demand or consumer requirements or any other factor except physical waste, the compact does not limit in any way the pacting state in this matter. In other words Oklahoma, Kansas and other states which now have conservation laws which recognize the principle of market demand, will continue to regulate matters affecting the petroleum industry in their own states under these same laws.

Congress was asked in resolutions adopted at the conference of states to enact necessary legislation making provision for the limitation of the importation of petroleum and its products, including asphalt, to 4½ per cent of the domestic production; to enact legislation which would meet objections of the U. S. Supreme Court and which would prohibit the movement in interstate commerce of petroleum and its products, produced, manufactured or withdrawn from storage in violation of state regulations. The conference also adopted a resolution asking Congress to continue in force leases on public lands as long as oil and gas in commercial quantities are found on these lands. Present laws provide for the expiration of leases on public lands on a certain date, regardless of whether such leases are productive or not. In the resolution Congress is simply asked to do in the matter of its leases on public lands what all the oil producing states and individuals now and always have done in the matter of leases on lands where production has been found.

Federal Control Opposed

Violent and unyielding opposition to federal control of the petroleum industry in any form was expressed often and freely during the two days' sessions of the conference. Co-operation of the federal Government in matters conceded to be entirely within the jurisdiction of the federal Government is earnestly desired by the oil-producing states in their efforts to make entirely effective and beneficial the provisions of the interstate compact. This co-operation is expected to take the form of legislation regarding imports and interstate shipment of petroleum produced or manufactured in violation of state laws.

Protection of the interests of consumers of petroleum and its products was a subject of first magnitude in all deliberations of the conference of states. This matter seemed foremost in the minds of all representatives and every effort was made to formulate and include in the compact adequate provisions to safeguard every consumer of gasoline in the country.

Eight of the states represented at the conference firmly believe the greatest source of waste which can occur in the oil business is the premature abandonment of wells still capable of producing small quantities of oil because of low prices of crude oil caused by overpro-

Gov. James V. Allred of Texas signing the interstate compact which Gov. E. W. Marland of Oklahoma (right) already has signed.

MARLAND A PIONEER COMPACT ADVOCATE

Gov. E. W. Marland, of Oklahoma, who sponsored the three conferences of representatives of the oil-producing states which resulted in the unanimous adoption of an interstate compact for the oil industry, started back in 1926 to work toward this goal. As president of the Marland Oil Co., and a director of the American Petroleum Institute, Governor Marland presented a resolution to the board of directors of the Institute at the annual convention in Tulsa in 1926, which resolution provided for a recommendation by the American Petroleum Institute that all oil-producing states enact uniform laws for the conservation of oil and natural gas. This resolution was adopted by the directors of the Institute at that meeting.

Governor Marland Sounds Keynote in Opening the Meeting at Dallas

By E. W. MARLAND
Governor of Okahoma*

This conference meets at a time when powerful forces are proclaiming that the federal Government must assume control of the oil industry because the states are not competent to regulate the conservation of oil.

In approaching the subject of a compact among the oil-producing states, we are confronted by the fact that the oil industry has never been satisfactorily regulated. There has never been uniformity in the laws enacted by the several oil-producing states. The oil industry is among the four major industries. There was an element of strength and romance in the wasteful freedom with which this great industry was developed. Today the lack of intelligent regulation causes conditions in the oil industry which are destructive to the best interest of the oil operators, the farmers who own the oil-producing land, the states in which the oil is produced, the consumers of oil products and the welfare of the public of the United States generally.

It is true that a great deal of the waste in the production of oil has been eliminated by scientific discoveries by which greater recovery of the powers of oil is made possible. Notwithstanding this great conservation of power, there still exists great reservoir waste in every pool, by reason of improper drilling and improperly regulated production.

There are two distinct theories of conservation. One group of conservationists would hoard the natural resources, compel this generation to forego their use, so that these resources might be reserved for possible use of some future generation. The other school believes that this generation has a right to every intelligent and efficient use of the present resources of the Nation, but does not have the right to waste or despoil resources, either by reason of greed or inefficiency.

In addition to all the other arguments against the hoarding of resources for future generations is the constant progress of scientific discoveries. Considering the discoveries of our generation, we may safely assume that future generations will discover natural sources of power that may make obsolete some of the present sources of power.

Engineers have estimated that there are 12,000,000,000 bbls. of petroleum recoverable from the proven fields in the United States. This oil reserve must be produced from approximately 350,000 existing

(Continued on Page 72)

*Before the interstate conference, Dallas, Tex., Feb. 18.

duction or failure to limit production to consumer demand.

Governor Marland was particularly desirous that a provision be included in the compact which would conserve the enormous unmined oil resources of this Nation and prevent the unrestricted production of crude oil which would result in abandonment of stripper wells, with the loss thereby of vast quantities of crude oil left in the ground and recoverable if prices were sufficient to justify continuance of operation of these wells.

Governor Marland said in this connection: "The greatest physical waste would be the waste of the unmined crude oil reserves. Unrestricted production will destroy 75 per cent of our mined reserves. These reserves are estimated at 12,000,000,000 bbls., and if production is not restricted and flush fields are permitted to glut the market, with resultant lowering of prices, operators of small wells cannot afford to operate their properties and must abandon these small producers, with a loss of these unmined reserves estimated at 9,000,000,000 bbls. of crude oil. No waste could be greater than that."

Abandoned Wells

Other states concurred in the views of Governor Marland, William Bell of Illinois stating that within the past few years 10,500 small wells in Illinois, each capable of producing a barrel or so a day, had been abandoned because flush fields of the country had flooded the markets and reduced crude prices to a point where the owners of these wells could not afford to stay in business. He said it cost $1.25 per barrel to produce oil from these small wells. Governor Marland said the average cost of production in Oklahoma was about $1.25 per barrel and it was stated there were between 20,000 and 30,000 wells in Texas where the cost of production would be $1 per barrel.

Ralph Pryor, representing Kansas; Warwick M. Downing, representing Colorado; Robert L. Patterson, of California; and others advocated adequate provisions which would permit stripper well owners to continue in business and thus reserve to the Nation these vast quantities of crude oil still in the sands but which would be lost forever if the small wells were abandoned.

Laws of the State of Texas and court decisions on rules and regulations promulgated by the Railroad Commission of Texas prevent restriction of production of crude oil except where physical waste is involved, and these facts were stated to the conference by Governor Allred and Col. Ernest O. Thompson, chairman of the Railroad Commission of Texas. Governor Allred made quite plain the fact he could not subscribe to any interstate compact which would involve price fixing or regulation of crude oil production on any basis other than that of physical waste.

Governor Allred said he does not believe any interstate compact, any form of federal control or any form of state control that is based on price fixing would be sustained by the courts. He said balancing supply and demand results in price fixing and that every order and regulation of the Railroad Commission of Texas is based solely on the question of physical waste and does not take into consideration any factor involving economic waste or market requirements.

Limitation of Pressure

Colonel Thompson concurred in these views of Governor Allred and detailed investigations made by his commission as to how much crude oil East Texas and other pools could produce without physical waste. He said East Texas at one time was allowed to produce 780,000 bbls. daily, but it was found such production from 5,000 less wells than are producing in the field now resulted in a very substantial drop in bottom hole pressure and such drop indicated physical waste, so the allowables for the field were reduced until such a time as bottom hole pressures tended to remain constant.

Production figures of The Oil and Gas Journal were referred to frequently to show the very close relationship between allowables fixed for the nation as a whole and the individual states and the actual production of the states. By these figures it was shown the actual production of the State of Texas conformed almost exactly with production allocations made for that State by the agencies in Washington setting such allowables. Colonel Thompson showed that his commission holds hearings each month on these matters and fixes the allowables for the State from investigations it makes on the basis of physical waste. In this connection it was said that during the 18 months the agencies in Washington have been making crude oil allocations for the different states the allowables fixed for Texas by the Railroad Commission of Texas never have exceeded those set by the Washington agencies, except in possibly one or two instances where the difference was very small.

The fact that production allowable figures determined by the Railroad Commission of Texas and based on physical waste always have conformed so closely to figures set by the Washington agencies made representatives of other states at the conference confident that, notwithstanding the fact the Railroad Commission does not base its findings and crude oil production allocations on market demand, the state authorities are doing and will do everything in their power to pre-

(Continued on Page 32)

Maximum Ultimate Recovery of Oil and Gas Is Text of Agreement by the States

Article I

This agreement may become effective within any compacting state at any time as prescribed by that state, and shall become effective within those states ratifying it whenever any three of the States of Texas, Oklahoma, California, Kansas and New Mexico have ratified and Congress has given its consent. Any oil-producing state may become a party hereto as hereinafter provided.

Article II

The purpose of this compact is to conserve oil and gas by the prevention of physical waste thereof from any cause.

Article III

Each state bound hereby agrees that within a reasonable time it will enact laws, or if laws have been enacted, then it agrees to continue the same in force, to accomplish within reasonable limits the prevention of:

(a) The operation of any oil well with an inefficient gas-oil ratio.
(b) The drowning with water of any stratum capable of producing oil or gas, or both oil and gas in paying quantities.
(c) The avoidable escape into the open air or the wasteful burning of gas from a natural gas well.
(d) The creation of unnecessary fire hazards.
(e) The drilling equipping, locating, spacing or operating of a well or wells so as to bring about physical waste of oil or gas or loss in the ultimate recovery thereof.
(f) The inefficient, excessive or improper use of the reservoir energy in producing any well.

The enumeration of the foregoing subjects shall not limit the scope of the authority of any state.

Article IV

Each state bound hereby agrees that it will, within a reasonable time, enact statutes, or if such statutes have been enacted then that it will continue the same in force, providing in effect that oil produced in violation of its valid oil and/or gas conservation statutes or any valid rule, order or regulation promulgated thereunder, shall be denied access to commerce; and providing for stringent penalties for the waste of either oil or gas.

Article V

It is not the purpose of this compact to authorize the states joining herein to limit the production of oil or gas for the purpose of stabilizing or fixing the price thereof, or create or perpetuate monopoly, or to promote regimentation, but is limited to the purpose of conserving oil and gas and preventing the avoidable waste thereof within reasonable limitations.

Article VI

Each state joining herein shall appoint one representative to a commission hereby constituted and designated as The Interstate Oil Compact Commission, the duty of which said commission shall be to make inquiry and ascertain from time to time such methods, practices, circumstances and conditions as may be disclosed for bringing about conservation and the prevention of physical waste of oil and gas and at such intervals as said commission deems beneficial it shall report the findings and recommendations to the several states for adoption or rejection. The commission shall have power to recommend the coordination of the exercises of the police powers of the several states within their several jurisdictions to promote the maximum ultimate recovery from the petroleum reserves of said states, and to recommend measures for the maximum ultimate recovery of oil and gas. Said commission shall organize and adopt suitable rules and regulations for the conduct of its business.

No action shall be taken by the commission except: (1) by the affirmative votes of the majority of the whole number of the compacting states, represented at any meeting and (2) by a concurring vote of a majority in interest of the compacting states at said meeting, such interest to be determined as follows: such vote of each state shall be in the decimal proportion fixed by the ratio of its daily average production during the preceding calendar half-year to the daily average production of the compacting states during said period.

Article VII

No state by joining herein shall become financially obligated to any other state, nor shall the breach of the terms hereof by any state subject such state to financial responsibility to the other states joining herein.

Article VIII

This compact shall expire September 1, 1937. But any state joining herein may, upon sixty (60) days' notice, withdraw herefrom.

The representatives of the signatory states have signed this agreement in a single original which shall be deposited in the archives of the Department of States of the United States and a duly certified copy shall be forwarded to the governor of each of the signatory states.

This compact shall become effective when ratified and approved as provided in Article I. Any oil-producing state may become a party hereto by affixing its signature to a counterpart to be similarly deposited, certified and ratified.

Done in the city of Dallas, Texas, this 16th day of February, 1935.

E. W. MARLAND,
The Governor of the State of Oklahoma.
JAMES V. ALLRED,
The Governor of the State of Texas.
ROBERT L. PATTERSON,
For the State of California.
DR. E. H. WELLS,
HIRAM M. DOW,
FRANK VESELEY,
HUGH BURCH,
For the State of New Mexico.

The following representatives recommend to their respective governors and legislatures the ratification of the foregoing agreement:

JOHN W. OLVEY,
Of Arkansas.
WARWICK M. DOWNING,
Of Colorado.
WILLIAM BELL,
Of Illinois.
G. F. VAN EENENAAM,
GERALD COTTER,
Of Michigan.
RALPH PRYOR,
T. C. JOHNSON,
E. W. SHAWVER,
Of Kansas.

Signing the interstate compact. Seated, left to right—Warwick M. Downing, Colorado; Gov. James V. Allred, Texas; Gov. E. W. Marland, Oklahoma, and Robert L. Patterson, California. Standing—James W. Olvey, Arkansas; Dr. E. H. Wells, New Mexico; Ralph Pryor, Kansas, and William Bell, Illinois. G. F. Van Eenenaam who signed for Michigan is not in the picture.

Amended Connally Bill Is Passed by the House; To Authorize Compact

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 19.—Unanimous passage by the House of Representatives Monday of a substitute for the Connally interstate oil shipment bill cleared the way for an early enactment of legislation to take the place of invalidated Section 9 (c).

Only minor amendments were made in the bill by the House from the draft as reported by the Interstate Commerce Committee.

The House substitute for the Connally bill now goes to conference with the Senate committee so that an agreement can be worked out reconciling the views of the two houses and a bill enacted for the approval of President Roosevelt.

In passing the bill without a record vote the House made only one comparatively important change. That part of Section 12 (a) which delayed the application of the forfeiture clause for five days after enactment of the law was deleted. It was felt that the only persons who would benefit by this delay would be the "hot" oil operators whose oil is now tied up by injunctions which probably will be dissolved within the next few days.

Representative Martin Dies (Democrat) of Texas opened the two-hour debate in the House on the bill with a report on the special rule allowing the immediate consideration of it and then launched into a declaration of the necessity for a law to prohibit interstate movement of "hot" oil and its products as soon as possible. Mr. Dies reiterated previous statements that the ideal way and the only constitutional method by which the oil industry could be stabilized in the interest of conservation by the federal Government was for the Government to purchase the East Texas Field and hold it as a federal petroleum reserve. As an illustration he cited benefits which would have accrued to the Government if it had taken such action to save the timber resources which were once the pride of East Texas. Mr. Dies maintained that the bill is entirely constitutional in every respect, although the Supreme Court has not ruled specifically on the identical points.

Chairman Cole's Views

Representative Cole (Democrat) of Maryland, chairman of the oil subcommittee, who was in charge of the bill on the floor, disagreed with Mr. Dies' statement that Texas was enforcing state laws in so far as they affect interstate shipments. Mr. Cole emphasized that state authorities could not control such transactions but that under the provision of the bill the federal Government could and would control such traffic. Mr. Cole explained that the bill does not give federal authorities any power to fix production allocations for the states nor to enforce any such allocation if made.

Representative Sauthoff (Progressive), Wisconsin, attempted to have the definition of the term "petroleum products" amended with the declaration that petroleum and its products should be classified as a public utility. His motion was ruled out of order.

Differences of opinion between members of the Cole committee were sharply brought out in the discussion. Representative Mapes (Republican), of Michigan, was outspoken in his desire for strict federal control. He stated that the pending legislation was ill-advised because it allowed the State to say how much oil should go into commerce and would allow the states to unloose a flood of oil which could cause premature abandonment of wells of settled production. For this reason he asserted there should be complete federal control.

Representative Wolverton (Republican), New Jersey, contended that the substitute for the Connally bill was not a conservation measure but was designed for industrial stabilization. He said a true conservation bill would force the shutting in of domestic oil sources and permit free importation. He favored enactment of the bill but contended it could have been drafted in a much more compact form. The real trouble with the oil industry, he said, is not lack of effort by either state or federal agency but is directly attributable to the failure of the various states to pass laws changing the law of capture.

To Authorize Compact

Representative Cole said that since the oil producing states had agreed on a form of interstate compact and were proceeding with plans for legislative adoption the supplemental report of his committee soon would be submitted to Congress. He said work on the report was being started although it might be a week or a month before it was ready. It is expected the report will cover only recommendations for legislation authorizing the states to enter into a compact.

As Reported by Committee

The bill as reported to the House by Representative Cole, chairman of the subcommittee of the House Interstate and Foreign Commerce Committee, sought to regulate the interstate shipment of illegally produced oil. It had been considerably changed from the original version introduced in the Senate and passed by that body. Originally the flat prohibition of interstate commerce in petroleum produced in excess of state laws was effected. As amended in the House committee, interstate commerce in hot oil was prohibited, but this limitation could be lifted at any time by the President if he found a disparity between supply and demand causing a shortage of oil to the consuming public.

This provision in the House bill was criticized by some attorneys, but its inclusion was defended by Representative Cole who declared there was no delegation of authority to the President under its terms. In the report Mr. Cole stated the majority of the committee was of the same opinion with regard to this section which was added at the urgent request of Representative Pettengill, a member of the subcommittee.

Pointing out that there was no delegation of authority as to when the act becomes effective Mr. Cole said in his report: "Congress declares in no uncertain terms that such shipments, or transportation, in interstate commerce as defined therein is prohibited, and violation of such federal law is punishable in the manner prescribed." As soon as the act was passed such commerce would become a violation of the law and subject to fine of $2,000 and/or six months in prison.

Provision was also made in the measure for confiscation, by the Federal Government, contraband oil shipped or transported in interstate commerce. This change, Mr. Cole stated, was aimed at the "hard boiled" violator who consistently violates the law by shipping such oil. In the case of consistent violators it was Mr. Cole's opinion that the oil, which is of much more value than the fine, should not be returned to the individual. It should be utilized by the Federal Government, he believed.

To protect innocent victims, or persons who inadvertently gain possession of illegally produced oil, it was provided that the United States may institute action to confiscate the oil, but it is not mandatory. It was further provided that no forfeiture should be made in the case of contraband oil owned by any person who had a certificate of clearance which on its face appeared to be valid and to have been issued by the board created under the law, if such person had no reasonable grounds for believing such certificate to be invalid or fraudulently issued.

To Expire June, 1936

According to the terms of the bill as reported by the House committee, it would expire on June 1, 1936, whereas the Connally bill would have been permanent law.

Representative Cole, in submitting the report on the bill, stressed the point that this was only stop-gap legislation and did not represent entirely the views of the members of the full committee, nor of the petroleum subcommittee. An excerpt from a communication addressed to Representative Sam Rayburn, chairman of the Interstate Commerce Committee from the petroleum subcommittee, stated that the "Connally Bill, S. 1190, does not represent the views of the subcommittee, but in view of your urgent request the subcommittee reports the same back to the full committee for whatever action it sees fit to take, with the understanding that each member of the subcommittee will feel at liberty to express his individual views before the full committee during consideration of the bill." Mr. Cole further stated in the report that "This bill is essentially 'stop-gap' legislation to meet the objections pointed out by the Supreme Court in the 'hot oil' cases." If enacted he believed interstate movement of hot oil would once again be stopped until the entire question could be more thoroughly considered.

Senator Connally, author of the Senate bill, will probably agree to most of the changes made by the House committee, as he attended most of the executive sessions held by the committee in drafting the bill. Charles Fahy and J. Howard Marshall, II, members of the Petroleum Administrative Board, also attended the committee meetings.

Representative Dies' suggestion that the Federal Government purchase the East Texas Field for a Federal reserve and at the same time stabilize the industry is being considered seriously by others. Representative Rayburn, chairman of the Interstate and Foreign Commerce Committee said he had proposed such a plan when the field first came in. If it had been adopted at that time he stated, the United States would have had an oil supply which would have lasted for 200 years. Since then the field has been exploited to such an extent Mr. Rayburn believes that its value as a reserve has been greatly impaired. Its purchase at this time would not benefit the government to any great extent he believes.

Drive for Enforcement of Oil Code to Be Begun

The opening gun in a drive for enforcement of the oil code is believed to have been sounded. Three suits have been instituted for violations, and numerous other actions will be brought soon. Almost simultaneously the Petroleum Labor Policy Board announced that several violations of the labor provisions will be aired in court and that the administration intends to test the legality of the labor provisions immediately.

Pierson M. Hall, U. S. attorney at Los Angeles, Calif., filed a bill seeking an injunction against the Mohawk Petroleum Co. and others, alleging the defendants overproduced crude from August, 1934, to January, 1935. District Judge William P. James granted a temporary restraining order and set the case for hearing on temporary injunction before Judge Paul J. McCormick.

Another case filed by Mr. Hull seeks similar injunction against the Bell View Oil Syndicate and others. A temporary order was likewise granted in this case by Judge James and the case set down for hearing before Judge McCormick.

At the same time the Bell View Oil Syndicate and others brought suit in the U. S. District Court in Los Angeles against Administrator Ickes et al to enjoin them from enforcing the provisions of the code. Hearing will be before Judge McCormick at the same time as the Government's plea for injunction.

Douglas W. McGregor, U. S. attorney at Houston, Tex., filed a bill asking injunction against J. M. Gibbons, Mrs. P. A. Porterfield and Mrs. L. T. Allert, doing business as the Gregory Auto Supply Co., Galveston, Tex., to enjoin them from continued violations of Article 5, Rule 17, of the code. Rule 17 provides that sellers shall not give away oil, premiums, trading stamps, free goods or other things of value, or grant any special inducement in connection with the sale of petroleum products. A hearing has been set at Galveston on February 21.

Increasing Activity Under Way in Southwestern Oklahoma Counties

By L. G. E. BIGNELL
Petroleum Engineering Editor

The four southwestern counties of Oklahoma, Harmon, Jackson, Greer and Tillman, seem destined to be the scene of considerable new activity.

In the southwest section of the State there are several granite masses that have been dignified by such names as Mount Scott, Mount Sheridan, Saddle Mountain, Haystack Mountain and Mount Baker. They rise from 700 to 900 feet above the surface of the plains surrounding them and the group form what are known as the Wichita Mountains. This range extends from Lawton in Comanche County north and west across Kiowa County to Granite in Greer County, not far from the town of Mangum. The length of the area from east to west is about 60 miles and the width from north to south is about 25 miles. The long axis of the Wichita Mountains is in the same direction as that of the Arbuckle Mountains and the two uplifts were undoubtedly produced by the same force.

Around the base of the Wichita Mountains there has been deposited sediments known as the "Redbeds." These beds cover the western half of the State of Oklahoma. Around the Wichita Mountains the formations increase in thickness as distance away from the mountains is gained. These Redbeds were deposited in ancient seas and in some stratas marine fossils are found. Portions of the Redbeds were deposited at the mouths of old rivers and in bays and estuaries, thus dividing the character of the formations into deep sea and shallow water deposits.

To the northwest of this area in the Panhandle of Texas sediments of the same character cover old roots of the Wichita Mountain system and along the flanks of these buried granite ridges the oil and gas fields of that region have been found at depths of approximately 3,000 feet below sea level. Oil has accumulated in the so-called "Granite Wash" material on the sides of the buried mountain masses in the Panhandle fields. Some oil and gas is also found in the limestone formations that cover the mountains and the "Wash."

In this region is the largest gas field in this country and also several important oil fields that produce both sweet and "sour" oils.

The buried granite ridges have been traced underground by drilling from near Dalhart, Tex., into Oklahoma near the town of Sayre in Beckham County, one of the western tier of counties bordered on the west by the Texas Panhandle.

Known Production

For some time geologists have held to the theory that other oil and gas fields will be found along the trend of the Wichita Mountains. In the area of southwestern Oklahoma this granite mass comes to the surface and as the Redbeds are deposited continuously around the base of these mountains it seems favorable territory for oil and gas accumulations.

To the southeast of the Wichita Mountains across the Red River there are several oil fields in northern Texas. These fields are found in the syncline in which the Red River flows and the formations from which the oil is produced are of Pennsylvanian age, and are therefore geologically older than the Permian Redbeds.

It therefore follows that it is possible for the seas of Pennsylvanian age to have encroached on the base of the old Wichita Mountains and deposited sediments. Later Permian seas have deposited Redbed formations around the base of the Wichitas and these formations may be over older Pennsylvanian beds similar to those that are productive of oil in northern Texas.

With these known and assumed conditions several oil companies have been doing considerable exploratory work in the region of Altus, county seat of Jackson County, about 10 miles to the west of the Wichita Mountains. Land has been leased in a zone that extends from Frederick, county seat of Greer County, about 20 miles southeast of Altus, passing through Altus and extending on to Mangum, county seat of Greer County, some 24 miles to the northwest of Altus. This play covers a length of about 45 miles in an almost straight southeast-northwest line paralleling the right of way of the Wichita Falls and Northwestern Railroad.

The Gypsy Oil Co. some time ago studied available geological maps of the region, then had geophysical work done and finally tested a "high" in the vicinity of Section 10-1n-20w, about 6 miles southeast of Altus, with a rotary drilled hole.

This location, designated as Gypsy Oil Co.'s No. 1 Kelly, is in the NE cor. of Section 10-1n-20w. Later it was discovered that this test hole had filled with oil and some gas was escaping and a diamond drill outfit was moved over the hole and it was deepened to about 2,000 feet without making a commercial producer.

Nos. 1-A and 1-B Kelly

The Gypsy Oil Co. then moved the diamond drill outfit to a twin location to the west of No. 1 test and known as Gypsy Oil Co.'s No. 1-A Kelly and the hole was drilled to about 1,700 feet with only small showings of oil. The hole was plugged back to 1,424 feet and test made in what was designated as the "granite wash" but no commercial production was secured.

Determined to give this location every opportunity to produce, a third test was started to the south of No. 1 Kelly and is known as No. 1-B Kelly. This hole was drilled with cable tools, a portable spudder being used for the work and gasoline engine for power.

By carefully drilling below the 1,400-foot depth the hole was carried to 1,441 feet, total depth. On December 13, 1934, it was reported to have topped the producing formation at 1,405 feet. The well swabbed 68 bbls. of 43 gravity oil in 12 hours and was shut down while tankage was erected on the lease. On January 3 the well was opened and produced 247 bbls. of oil per day. Surface elevation of well is 1,327 feet.

Even after this well was completed there was no great activity in the region to secure additional acreage by companies or individuals who had not up to that time secured leases along this trend.

After completing No. 1-B Kelly for a well, work was done on No. 1-A Kelly, the diamond drilled hole and it was completed as a gas well making 370,000 feet of gas from a sand penetrated from 1,102-70 feet. This gas is being used as fuel for engines furnishing power to other wells now drilling in the area.

The Gypsy Oil Co. made another location to the north of No. 1-A Kelly, that is known as No. 1 Stokes and is in the SE NW SW Section 11-1n-20w. This well was drilled with cable tools to a depth of 1,723 feet, then plugged back to 1,668 feet and shot with a casing gun perforator from 1,663 to 1,533 feet. The hole filled with muddy water with a rainbow showing of oil. Work is still being carried on in this hole hoping to make it into an oil well.

It is reported that the Gypsy Oil Co. has acquired between 130,000 and 150,000 acres in Jackson, Greer, Harmon

(Continued on Page 72)

Geological map of Southwestern Oklahoma showing lithobathyc lines drawn on the base of the Redbeds. From Oklahoma Geological Survey Bulletin 30 by Fritz Aurin

Initial Operation of New Dubbs Cracking Installation Completed

By W. T. ZIEGENHAIN

The Cushing Refining & Gasoline Co. has recently placed its new 1,500-bbl. Dubbs cracking unit on a routine plant schedule. Up to the present time the company's refinery at Cushing has remained one of the few older Oklahoma units not employing cracking facilities in its operation.

With this addition, the plant is balanced to process all of the residuum from its topping plant and the first complete data showing what may be expected of the unit was made available this week.

In general, the processing follows the conventional Dubbs system, one feature of the installation being a dual side-fired Alcorn furnace that provides unusual flexibility in equalizing the effect of changing the type of charging stock, charging rate, etc.

Gas Oil Operation

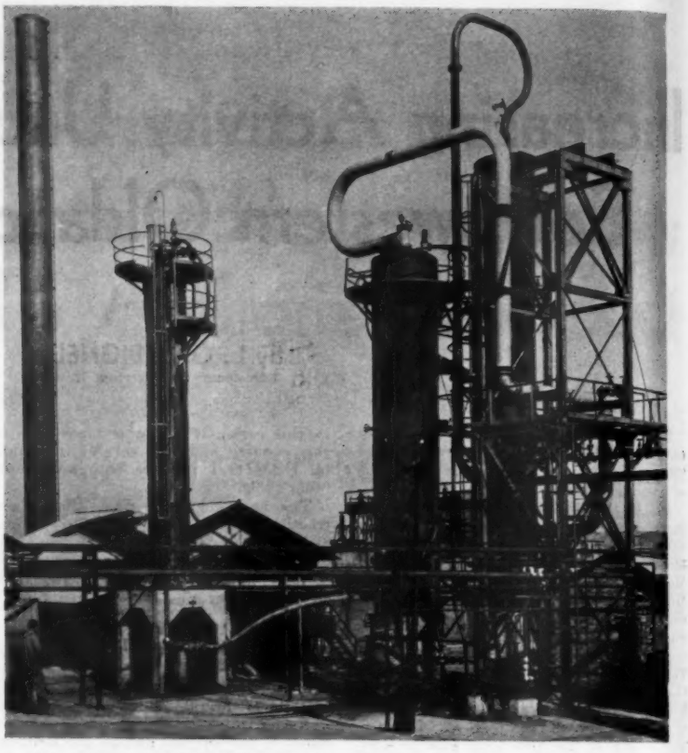
The unit had been operating on gas oil but was recently converted to running a 27 gravity Mid-Continent residuum. While on gas oil for a period of 350 hours, the plant yielded 68.58 per cent 400 endpoint gasoline, 17.92 per cent 8 gravity fuel oil and 9.90 per cent uncondensed gas. There remained 3.60 per cent to be accounted for as coke and evaporation losses.

In a period in which 12,511 bbls. of 36.5 gravity gas oil were charged the gas production totaled 5,386,000 cubic feet. During the run all of this gas was utilized as fuel and credit was not taken in the gasoline yield for any vapors that might have been recovered for it has only been within the past two weeks that the vapor recovery plant has been in operation as part of the new unit.

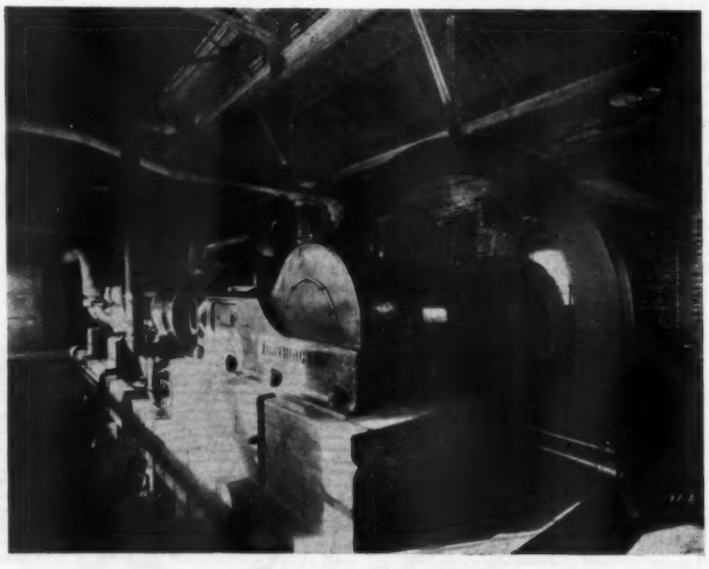
It should also be pointed out that the gas oil contained some kerosene and light distillate, making the operation a little more difficult than when running a normal virgin gas oil cut.

Stating briefly the steps in the processing of the gas oil, reference should be made to the accompanying flow chart. The temperatures indicated reflect a gas oil operation when the unit is making an 8 gravity fuel. The gas oil charge enters the system by way of the absorption tower. The cold gas oil also acts as an absorption medium for gasoline vapors contained in the gas as the latter comes from the fractionating tower and gas separator. From the base of the absorber the enriched gas oil is pumped into the main fractionating tower near its midpoint.

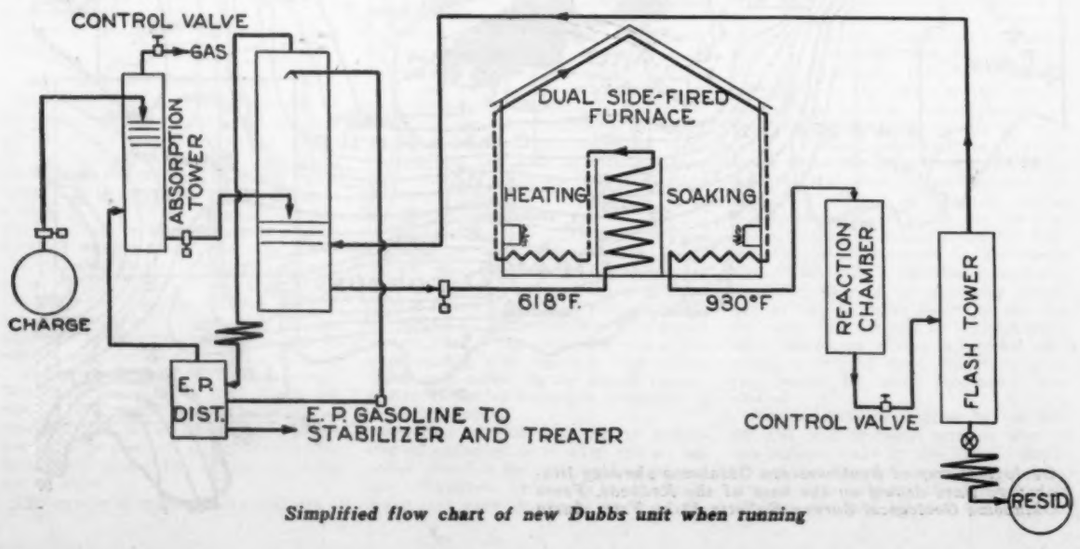
The oil receives some heat from the incoming vapors off the flash tower and leaves the tower to be charged through the furnace at a temperature of about 618° F. The work of handling the hot oil is done by a Worthington reciprocating pump working against a back pressure of nearly 400 pounds.



General view of Cushing Refining & Gasoline Co.'s new Dubbs unit



Hot oil charging pump



Simplified flow chart of new Dubbs unit when running

Furnace Construction

The oil enters the furnace through a series of 45 tubes 4½" by 3½" and 30 feet in length. These 45 tubes are supported through the center of the furnace and in the path of the flue gases. The oil then passes through a series of nine floor tubes in what is termed the heating section of the furnace. Then the oil passes up through the roof tubes which are arranged in a slanting bank, as shown in the picture.

There are 16 roof tubes on the heating side and a similar number on the soaking side. As the oil continues to flow, first through the heating and then through the soaking side, it passes through 18 more floor tubes on the latter side. These 18 tubes provide ample volume to give a great deal of flexibility in the operation of the furnace and provide for an easily controllable heating curve. The furnace is fired from opposite sides and 14 mufflers provide for the equal distribution of the heat along each side. The walls and roof are suspended and the tubes are equipped with key headers.

When running gas oil the outlet temperature of the furnace is maintained at about 930° F. and at this temperature the oil enters the reaction chamber. Here the pressure is maintained at about 350 pounds. A constant pressure is maintained in the chamber, by means of an air actuated Mason Neilan pressure control valve through which the pressure is reduced to 50 pounds. At this pressure the oil enters the flash chamber where the uncracked fuel oil drops out and is continuously withdrawn in the conventional manner.

The overhead vapors from the flash tower are lead back to the fractionating column to pass upward through a series of bubble trays and the gasoline fraction leaves the tower under controlled conditions at a temperature of 373° F. to be cooled, condensed and collected in a receiving drum.

(Continued on Page 15)

Trend of World Consumption of Oil and Present Statistical Position

By V. R. GARFIAS and R. V. WHETSEL
Foreign Department, Henry L. Doherty & Co., New York*

For some time the writers have been compiling and analyzing statistics of consumption and production of petroleum, its products and related fuels, in order to arrive at a fairly accurate picture of the world-wide situation of the petroleum industry. In production, crude oil, natural gasoline, benzol and alcohol blended with motor fuel have been considered. In consumption not only refined products, but crude consumed as fuel, refinery losses, ships' bunkers and blended fuels have been taken into account to obtain a true balance between supply and demand. Statistics from practically every country and territory have been studied, and where actual figures were not available, the estimates have been based on all the data available.

The figures in Table 1 indicate that during the last five years the world's production has exceeded demand every year and that the aggregate difference is some 207,150,000 bbls. It should be pointed out that the supply in the United States exceeded consumption by 111,401,000 bbls. over the same five-year period and that in 1931 and 1932 the demand exceeded supply while outside the United States the excess of output over demand was 95,749,000 bbls. Table 2 combines the excess production in the United States with its favorable balance of exports over imports, showing that the United States has reduced its storage over the five years by about 136,595,000 bbls. while in Table 3 it is seen that, including its excess of imports from the United States, the rest of the world has added 343,745,000 bbls. to storage during the period in question, the greatest accumulation coming in 1934. Table 4 shows the world's consumption classified by countries according to the principal products.

These tables also indicate that at the end of 1934 the statistical position of the petroleum industry outside the United States was decidedly unstable, a situation which will probably become more acute as a result of the added Iraq production; and that the present favorable statistical position of the industry in the United States—which is partly due to the excess of exports over imports—may be to some extent jeopardized by the unstable situation in the foreign market.

All figures are in thousands of barrels, those of 1934 being esitmated from statistics available in December.

Outside of the United States, refinery losses, crude for fuel and consumption of by-products not included under miscellaneous is estimated at 20,600,000 bbls. for 1932, 23,700,000 bbls. for 1933, and 24,000,000 bbls. for 1934, which figures should be added to the yearly totals shown in Table 4.

*Before A.I.M.E. meeting, New York, February 18-21.

TABLE 1

	World production	World consumption	Excess prod. over consumption
1930	1,477,989	1,428,499	49,490
1931	1,432,142	1,417,374	14,768
1932	1,362,039	1,348,407	13,632
1933	1,467,128	1,406,923	60,205
1934	1,553,100	1,484,045	69,055
	7,292,398	7,085,248	207,150

TABLE 2
United States

	Excess prod. over consumption	Excess imports over exports	Total to storage
1930	30,700	R 51,939	R 21,239
1931	R 5,815	R 38,788	R 44,603
1932	R 13,011	R 28,781	R 41,792
1933	67,427	R 60,254	7,173
1934	32,100	R 68,234	R 36,134
	111,401	R 247,996	R 136,595

TABLE 3
World Outside United States

	Excess production over consumption	Excess imports from U.S.A. over exports to U.S.A.	Total to storage
1930	18,790	51,939	70,729
1931	20,583	38,788	59,371
1932	26,643	28,781	55,424
1933	R 7,222	60,254	53,032
1934	36,955	68,234	105,189
	95,749	247,996	343,745

TABLE 4—WORLD CONSUMPTION OF PETROLEUM PRODUCTS AND RELATED FUELS
(Thousands of barrels)

	1932						1933						1934					
	Motor fuel	Kerosene	Gas and fuel oil	Lubricants	Miscellaneous	Total	Motor fuel	Kerosene	Gas and fuel oil	Lubricants	Miscellaneous	Total	Motor fuel	Kerosene	Gas and fuel oil	Lubricants	Miscellaneous	Total
United States	377,791	33,221	308,157	16,614	99,699	835,482	381,561	38,440	321,395	17,066	108,068	866,530	406,000	43,700	329,000	18,600	115,700	913,000
Russia	7,607	23,464	58,492	5,292	4,260	98,115	8,838	24,722	51,818	6,121	4,001	95,500	9,340	25,280	52,500	6,800	4,400	98,320
United Kingdom	30,328	5,283	19,280	2,462	1,810	59,163	33,220	5,480	21,900	2,937	2,430	65,967	34,500	6,260	25,700	3,020	3,170	72,650
France	19,571	1,584	8,828	1,768	1,814	33,565	21,268	1,522	12,594	2,019	1,156	38,559	21,400	1,810	12,720	2,100	1,360	39,390
Canada	14,435	1,558	13,153	746	2,060	31,952	15,016	1,608	13,520	757	1,912	32,813	16,200	1,700	14,200	800	1,600	34,500
Germany	12,789	960	3,996	2,015	1,620	21,380	12,373	841	6,429	2,001	1,893	23,537	14,200	860	7,500	2,200	1,700	26,460
Argentina	4,835	832	12,244	287	820	19,018	5,301	1,064	12,678	283	910	20,236	5,480	1,200	12,900	260	970	20,810
Japan	5,234	850	6,227	982	530	13,823	5,650	1,006	7,781	1,478	470	16,385	6,000	1,200	9,600	1,500	400	18,700
Mexico	1,724	567	9,820	109	2,413	14,633	1,765	582	11,091	121	2,175	15,735	1,880	600	11,280	140	2,400	16,300
Rumania	706	1,225	9,701	190	2,020	13,842	726	1,262	10,076	195	1,625	13,884	770	1,250	11,400	200	2,000	15,620
British India	2,389	6,916	3,668	770	1,036	14,779	2,085	5,899	3,382	877	920	13,163	2,150	6,000	3,500	950	930	13,530
Italy	2,915	1,102	5,323	801	229	10,370	3,001	1,133	7,296	642	240	12,312	3,240	1,200	7,800	640	250	13,130
Dutch East Indies	1,687	2,510	5,750	531	1,356	11,834	1,500	2,275	4,610	544	1,171	10,100	1,520	2,330	5,000	550	1,300	10,700
Australia	5,359	990	772	313	513	7,947	5,724	1,201	2,631	336	388	10,280	5,820	1,250	2,900	330	400	10,700
Dutch West Indies	156	19	5,200	22	2,820	8,217	160	21	5,100	24	2,795	8,100	170	30	5,700	30	3,100	9,030
China	675	3,674	1,530	194	85	6,158	744	4,460	2,184	264	93	7,745	900	3,900	2,500	250	100	7,650
Persia	461	1,200	3,200	670	1,230	6,761	673	1,385	3,259	660	1,410	7,387	700	1,200	3,300	700	1,600	7,500
Holland	2,891	1,346	1,376	352	202	6,167	3,291	1,464	1,992	427	137	7,311	3,280	1,460	1,770	390	330	7,230
Venezuela	474	25	4,866	42	350	5,757	507	17	4,922	28	380	5,854	590	20	5,200	30	500	6,340
Brazil	1,790	590	2,312	149	20	4,861	2,005	629	2,945	165	17	5,761	2,280	700	3,100	190	20	6,290
Sweden	2,921	612	1,602	321	60	5,516	2,930	719	2,003	294	116	6,062	3,090	725	1,920	310	135	6,180
Spain	3,122	165	1,728	210	280	5,505	3,032	215	1,502	174	360	5,283	3,290	200	1,630	190	350	5,660
Belgium	2,266	720	984	590	103	4,663	2,589	304	978	242	107	4,220	3,000	350	990	320	140	4,800
Denmark	1,980	639	1,605	181	14	4,419	1,840	680	1,630	183	8	4,340	2,160	630	1,580	195	15	4,580
Egypt	413	2,142	1,231	114	102	4,002	419	2,061	1,506	165	69	4,220	430	2,100	1,600	170	80	4,380
Cuba	699	173	2,784	52	40	3,748	504	114	2,840	41	38	3,537	490	120	3,000	40	30	3,680
Union of South Africa	1,901	415	404	130	147	2,997	2,149	451	560	154	147	3,461	2,200	460	700	160	150	3,670
Norway	847	277	1,335	69	48	2,576	895	264	2,090	92	60	3,401	980	270	2,060	90	50	3,450
Philippine Islands	759	560	1,824	74	102	3,319	891	590	1,790	102	90	3,463	860	580	1,800	70	80	3,390
Czechoslovakia	2,001	220	337	190	32	2,780	1,911	353	712	214	30	3,220	1,960	280	800	200	35	3,275
Switzerland	1,736	194	862	150	25	2,967	1,661	186	1,014	137	12	3,010	1,780	200	1,100	140	20	3,240
Hawaii Islands	905	106	1,449	45	72	2,577	909	129	1,624	44	59	2,765	920	130	1,800	50	60	2,960
New Zealand	1,669	159	968	62	41	2,899	1,590	120	780	72	71	2,633	1,650	110	950	70	80	2,890
Poland	643	944	328	357	452	2,724	780	943	401	308	378	2,810	750	920	380	310	360	2,720
Trinidad	110	61	2,690	31	236	3,128	122	63	2,030	30	210	2,455	120	70	2,200	30	280	2,700
British Malay	508	230	2,308	62	110	3,218	414	259	1,519	52	216	2,460	450	260	1,500	50	220	2,430
Chile	410	64	1,415	32	18	1,939	520	63	1,358	43	10	1,994	560	60	1,780	40	10	2,450
Uruguay	581	180	1,363	23	7	2,154	590	210	1,410	29	11	2,250	660	230	1,500	30	10	2,430
Panama Canal Zone	78	22	1,631	8	7	1,746	80	24	1,792	8	17	1,921	90	30	1,900	10	20	2,050
Iraq	141	153	530	33	156	1,013	185	182	832	39	210	1,448	310	200	1,200	60	240	2,010
Irish Free State	1,110	420	103	65	124	1,822	1,101	416	110	61	150	1,838	1,180	420	160	70	150	1,980
Austria	840	243	425	127	12	1,647	848	276	643	137	16	1,920	830	270	650	140	20	1,910
Algeria	930	364	187	81	70	1,632	1,138	377	244	107	86	1,952	1,000	370	350	100	80	1,900
Peru	342	328	590	31	165	1,456	428	461	509	32	190	1,620	440	480	520	40	230	1,710
Hungary	435	495	207	41	20	1,198	431	489	241	58	89	1,408	500	490	480	70	100	1,640
Greece	462	166	722	67	32	1,389	393	147	777	41	30	1,388	390	150	900	40	30	1,510
Porto Rico	391	59	943	23	16	1,432	449	65	806	22	29	1,362	460	70	850	20	30	1,430
Portugal	392	315	266	34	38	1,045	432	368	267	31	40	1,138	480	380	266	30	40	1,170
Finland	442	344	76	63	50	975	511	282	96	65	58	1,012	530	290	80	70	60	1,030
French Morocco	726	125	83	38	91	1,063	696	100	77	48	60	981	710	110	90	50	60	1,020
Others	5,092	4,211	14,530	891	710	25,434	5,142	4,367	15,114	984	985	26,592	5,300	4,500	15,600	1,000	1,000	27,400
Total	528,609	103,022	529,405	38,504	128,267	1,327,807	540,988	110,190	554,958	40,953	136,134	1,383,223	574,500	117,405	577,900	43,815	146,395	1,460,045

Atlantic Completes Combination Unit to Handle 20,000 Barrels

Recording instruments and control board for operating Atlantic Refining Company's new combination unit at Philadelphia plant.

By C. O. WILLSON

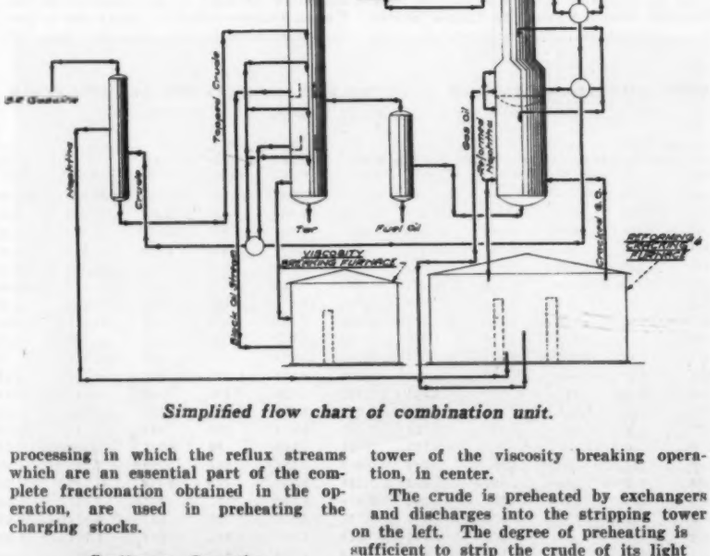
The Atlantic Refining Co. has had in operation at its Philadelphia (Point Breeze), Pennsylvania, refinery for several weeks a combination unit which incorporates the latest developments in the design of atmospheric and high pressure distillation equipment of large throughput, operated primarily for the production of high octane gasoline. The unit has sufficient capacity to refine 15,000 bbls. of crude oil and 5,000 bbls. of topped crude in one continuous topping, viscosity breaking, cracking and reforming operation giving an overall yield of 70 octane gasoline with commercial grade fuel oils as the residual products.

The Atlantic installation is another example of the trend in refinery installations which reflect the rapid progress in the application of fundamental research and engineering data to the design of equipment in which a large capacity is obtained with relatively low investment and operating costs. It is finding its most important application in plants handling large volumes of crudes where it is practicable to allocate a substantial quantity of raw material of uniform quality to one particular operation or where in the case of a smaller plant, the entire crude oil supply is of the same general specifications. The unit is flexible both as to charging stocks and finished products obtained but it is most attractive where a uniform operation is possible. The Atlantic's Philadelphia refinery has a crude capacity of 65,000 bbls. daily so that large quantities of crude are processed into a wide variety of products in addition to those obtained in the newest installation.

Principal Features

The principal features of the Atlantic installation are three towers each serving as an evaporator and fractionator, a heater for viscosity breaking and a double heater for gas oil cracking and naphtha reforming. These heating, distilling and fractionating divisions are inter-related and the efficiency of the entire operation is directly dependent on their proper correlation at all times.

The economy of the operation is partially dependent on the conservation of waste heat through exchange and this feature possibly more than any other, points to the remarkable developments in processing in which the reflux streams which are an essential part of the complete fractionation obtained in the operation, are used in preheating the charging stocks.



Simplified flow chart of combination unit.

Continuous Operation

The accompanying flow chart shows the main operating features of the Atlantic unit. The crude oil charge which at this time amounts to 12,000 to 15,000 bbls. daily is brought to a temperature of approximately 600° F. through a series of heat exchangers where it is preheated with the hot reflux oils of the main high pressure evaporator and bubble tower shown on the right of the diagram and the evaporator and bubble tower of the viscosity breaking operation, in center.

The crude is preheated by exchangers and discharges into the stripping tower on the left. The degree of preheating is sufficient to strip the crude of its light fractions including at this time a straight-run gasoline cut of low endpoint and a heavy naphtha cut. There is considerable flexibility in this operation from the standpoint of fractionation. The tower is provided with strippers and it is possible, if desired, to remove other cuts, including kerosene.

The heavy naphtha cut is pumped direct to the naphtha reforming coil of the combination furnace where it undergoes conversion as to boiling range with substantial improvement in antiknock rating. From the coil as shown in the diagram it is discharged into the high pressure evaporator and bubble tower for fractionation.

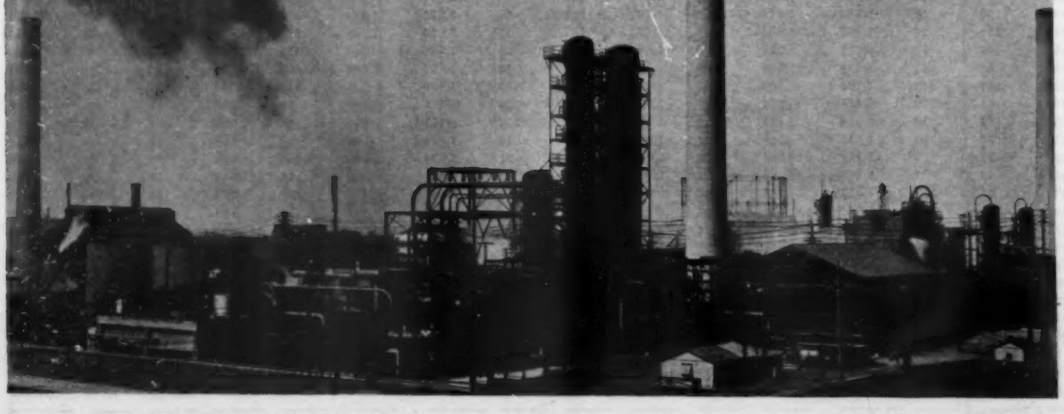
The topped crude from the base of the stripping tower is picked up by a hot oil centrifugal pump and charged to the bubble tower and evaporator of the viscosity breaking operation. At present from 3,000 to 5,000 bbls. daily of topped crude obtained in another phase of the Atlantic's plant operation are also being charged to the same evaporator. This charge is preheated with the reflux oils of the high pressure tower. The charging stock for the viscosity breaking coil is removed from the base of the fractionator and discharged near the base of the evaporator. This operation reduces the quantity of residuum, decreases its gravity and viscosity and prepares a clean gas oil stock of the proper characteristics for the cracking operation. The tar residuum removed from the base of this fractionator has a low gravity and by blending with other fuels can be utilized as bunker fuel. It is also suitable as charging stock for the Knowles ovens which are operated at the refinery. In this latter operation the tar is reduced to a coke with an overhead product utilized as fuel or cracking stock.

Flow of Oil

A gasoline cut of controlled specifications is taken from this tower. After passing through a gas separator it becomes a part of the total yield of cracked gasoline, the bulk of which is obtained from the high pressure fractionator.

The gas oil first goes to the high pressure fractionator. The cycle stock is removed from the base of the fractionator and charged to the main cracking coil with the outlet from the coil at the base of the evaporator. By carefully controlling the quantity and quality of the crude and cycle gas oils and by cracking under controlled conditions the aim of securing a large yield of high antiknock gasoline is accomplished. The motor fuel product is also desirable from the standpoint of volatility. Based on distillation tests it has large percentages recovered at low temperature with a low vapor pressure.

The fuel oil residuum from the base of the main evaporator is flashed in a small tower. The overhead is returned to the evaporator of the tower which is part of the viscosity breaking operation. A fuel of low viscosity is obtained as a residual product from the flash tower. All gasoline from the operation after being passed through gas separators is stabilized and treated with facilities



General view of Atlantic Refining Company's 20,000-barrel combination topping and cracking unit.

which have been in operation at the refinery for some time.

Design of Heaters

In handling such a large volume of liquid it is apparent that operation of furnaces is important. The viscosity breaking coil is one heater and the higher temperature cracking coils for gas oil and naphtha are located in the second furnace. The latter has a double combustion and radiant section heater with a common convection bank of tubes between the two combustion zones. Both furnaces have heat absorbing surface on the four walls and roofs of the fire boxes. This design gives a furnace of high thermal efficiency and results in economy in the use of materials for furnace construction.

The heating surface of the furnaces consists of seamless carbon steel tubing except in the case of the naphtha reforming oil which has low molybdenum content steel alloy seamless tubes. The return bends are the Kellogg deflector plug forged body type. The furnaces have Coen oil and gas burners and the refinery gas is the principal fuel used.

Automatic Control

In the operation of units of this size with their complex and inter-related operating features, automatic control plays an especially important part. Practically all instruments are located in one specially designed control room. One operator remains in this control room at all times with an assistant who takes care of the outside operating details connected to the control room. Three or four additional men complete a shift.

It has been found that in the case of the Atlantic and other installations that major operations of this type lend themselves readily to automatic control. Due to the large volumes of liquid and gases handled, the units are less sensitive to minor changes in operating conditions such as variations in atmospheric temperatures, than are the smaller units. The control instruments can make adjustments for these fluctuations in operating conditions without breaking the continuity of operation.

The control instruments used at the Atlantic installation include: Indicating and Recording Potentiometer Pyrometers (Leeds and Northrup Micromax); Non-recording Temperature Controllers (Foxboro Potentiometer Stabilogs); Recording Flow Controllers (Foxboro Stabilog); Recording Flow Meters (Brown and Foxboro).

Most of the pumps used are the centrifugal type. Several Pacific pumps handle the oil at high temperatures and against high pressures. Explosion proof motors are used for the smaller drivers and squirrel cage motors for the larger power units. The large pumps are dual driven centrifugals with G. E. Motors and Whiton type non-condensing turbines for drivers. Some of the pumping services are spared with National Transit horizontal duplex type pumps.

The unit was designed and built by the M. W. Kellogg Co. in co-operation with the engineers of the Atlantic Co. The furnaces are of the Kellogg design and the pressure towers, including the evaporator, are of the Kellogg fusion welded construction in accordance with the A.P.I. code applying to unfired pressure vessels for petroleum products. The shell and tube condensers and coolers were built by the Kellogg company. The shells are of fusion welded construction except in the case of the smaller units which have shells of lap welded steel plate.

REFINERS CONVENTION

The twenty-third annual convention of the Western Petroleum Refiners Association will be held at Excelsior Springs, Mo., April 4 and 5. A. V. Bourque, secretary of the association, announced that the first day will be given to the reading of technical papers, followed by a day of general discussion.

Overproduction Increasing in East Texas; Interstate Trucking Is New Problem

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 18.—More and more plants are firing up each week, this week seeing 36 in operation, an increase of six. They averaged over 72,500 bbls. per day in crude runs, the plants being connected to a daily allocation of around 17,000 bbls. The daily runs showed a gain of nearly 20,000 bbls. per day over last week.

Overproduction in the field was estimated at over 63,000 bbls. per day for the week, an increase of around 23,000 bbls. per day. However, shipments of refined products fell 600 bbls. short of the previous week. But tanks and pits were being filled as they were drawn upon under injunction, according to those watching the situation, and this week's decrease in shipments is not to be looked upon as being encouraging.

Refined shipments from the field for the week:

Commodity—	Cars	Gallons
Gasoline	672	5,437,365
Fuel oil	566	5,381,475
Residuum	303	1,801,355
Casinghead gasoline	145	1,219,460
Crude oil	189	1,668,930
Topped crude	58	523,355
Kerosene	71	594,770
Distillate	45	368,750
Gas oil	43	350,100
Total	1,991	

Of these, 956 cars were shipped with tenders and 1,036 cars without tenders; 476 were shipped intrastate, 426 interstate and 1,090 cars for coastwise shipping.

Gasoline is now reported being hauled by trucks to evade state regulations across the state line into Louisiana where it then loses its identity, making it an interstate problem and free of Texas authority. Truckers and owners only have to post a $1,000 bond in Louisiana and are free to move the product where they see fit, even back to Texas. The Railroad Commission men at Kilgore, headed by Harry Miles, and assisted by the attorney general's department, are studying some method to prevent this practice. So far injunctions against truck movements without tenders have been ineffective. On February 12 there were 159,243 gallons of products shipped by trucks from the field, 31,415 of which was tendered and 127,828 gallons untendered. On the following day 714,240 gallons was shipped, 48 truck loads being tendered and 220 untendered.

Nine oil truck drivers have been fined and 10 others sent back to the East Texas Field with their loads. One plant supplying such products has been closed down and another said he was going to shut down. The truckers were fined on charges of violating trucking regulations of the motor transportation division of the Texas Railroad Commission.

New Dubbs Unit at Cushing Refinery Plant

(Continued from Page 12)

This gasoline has the following characteristics:

TYPICAL GASOLINE SAMPLE

Gravity	53.0
Initial point, deg. F.	78
10 per cent, deg. F.	134
20 per cent, deg. F.	182
50 per cent, deg. F.	276
90 per cent, deg. F.	382
Endpoint, deg. F.	392
Octane No.	68

This gasoline then passes through a stabilizer, is inhibited and is then ready for shipment.

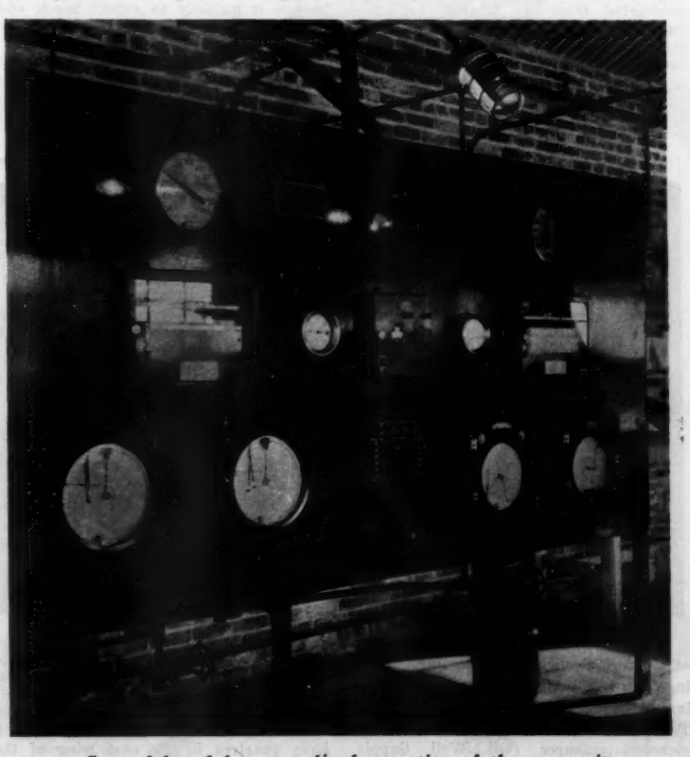
The fuel oil showed the following characteristics:

Gravity, deg. A.P.I.	8
Vis. at 122° F., S. U.	108
Flash, deg. F.	140
Fire, deg. F.	196
B.s. and w., per cent	.8

Topped Crude

When charging 27 gravity topped crude operating conditions are modified somewhat and initial results indicate a yield of 50.5 per cent of 390 endpoint gasoline, to which will be added the light fractions recovered from the vapor recovery unit that should bring the total up to 55 per cent. The gasoline now being made from topped crude shows the following characteristics:

Gravity, A.P.I.	60.3
Initial point, deg. F.	80
10 per cent, deg. F.	128
20 per cent, deg. F.	164
50 per cent, deg. F.	264
90 per cent, deg. F.	368
Endpoint, deg. F.	386
Recovery, per cent	95
Octane No.	68 to 69
Gum, mg.	39



Control board for centralized operation of the new unit

Associated Will Spend $8,900,000 on Expansion

LOS ANGELES, Calif., Feb. 16.—In the most extensive capital expenditure program it has undertaken since 1928, Associated Oil Co. will spend $8,900,000 for construction and development of production, transportation, manufacturing and retail outlet facilities during the present year, it is announced by C. R. Brown, assistant to the president. This program is the direct result of improved business conditions particularly affecting the automobile and petroleum industries, Mr. Brown said.

Budget allotments provide $6,300,000 for drilling and development operations in the Ventura and San Joaquin Valley oil fields and the acquisition of additional prospective acreage; $523,000 for transportation improvements including pipe line and automotive equipment; $575,000 for manufacturing equipment and improvements at the Avon and Watson refineries; and $600,000 for supplemental items.

Of particular importance to the building industry, expenditures approximating $1,500,000 are anticipated for construction and improvement of service stations—twice the amount the company spent on retail outlets in 1934. Seventy-five stations are either under construction or will be started shortly, according to Mr. Brown. Cities where stations are already under construction include San Francisco, Los Angeles, Santa Clara, Gilroy, Santa Barbara, Portland, Eugene, Klamath Falls Seattle, Shelton, Yakima, Tacoma and Olympia.

"Associated Oil Co. feels that general business improvement during the last year warrants this program, and we are confident that 1935 will show further progress in economic recovery along the Pacific Coast."

Division of Production Meetings Are Announced

C. O. Rison, chairman, announces that the regular spring meeting of the Mid-Continent district, Division of Production, American Petroleum Institute, will be held in Amarillo, Tex., April 10 and 11, in the Herring Hotel.

Among the subjects will be geology and petroleum possibilities in the Panhandle area, history of carbon black and its use in industry, helium gas, and directional drilling.

Chairman W. T. Doherty announces that the regular spring meeting of the Southwestern district will be held in the Plaza Hotel, San Antonio, Tex., April 25 and 26. The annual San Jacinto Day Festival will be celebrated directly following the meeting. It is planned to hold three group sessions—the morning and afternoon of April 25 and the morning of April 26. The local oil fraternity in San Antonio will be hosts at this meeting.

Several interesting papers and discussions are planned, including an address by George A. Hill, Jr., president of the Houston Oil Co. at Houston, Tex., and vice president of the Institute's Division of Production, and A. D. Simpson, president of the National Bank of Commerce at Houston. It is also proposed to review oil and gas development in the San Antonio area. Other subjects under consideration are: "Paraffin and Allied Production Problems," "Blowout Prevention in High Gas Pressure Areas," "Accident Prevention," "Vocational Training" and "Tool Joint and Drill Pipe Failures."

Engineer Says Surface Methods Can Produce as Much as Mining

By WILLIAM L. HORNER
Research Engineer, Forest Oil Corp., Bradford, Pa.

Many oil men have recently mentioned underground mining as a practical means of producing oil when future price may permit such expensive operations. It seems that many have faith in the ability of underground mining methods to permit the producer to recover a large percentage of the oil retained in an oil sand after present primary surface methods have been fully utilized. The writer believes, however, that the recoveries predicted for oil mining in consolidated rocks have been somewhat over-optimistic and that present and future surface methods can produce as much and perhaps more oil than can suggested underground methods.

George S. Rice, chief mining engineer of the U. S. Bureau of Mines,[1] stated in a recent publication: "The basic assumptions for estimating the cost of production of oil by underground mining are highly conjectural, not so much from a standpoint of the mining development and equipment, which it is reasonably certain can be accomplished within the figures of the preceding pages, but through the uncertainties of:

1. The oil remaining in the sands at the location selected.
2. The proportion of the oil, from the amounts predetermined by prospecting, that can be secured by methods of extraction through the drill holes from mine passeges."

A third uncertain consideration could be the proportion of the oil recoverable by existing surface methods.

The amount of oil remaining in the sands at the location selected can be determined by testing cores from the reservoir. The amount of oil removable by underground methods can be estimated from laboratory observations; and the proportion of oil extractable by surface methods can be accurately calculated from laboratory and field experiences in water flooding developments. A brief summary of several recent observations by the writer on these subjects might be of interest to some producers.

Since the oil content of a pool eligible for consideration as a future mining prospect can now be determined accurately, revision of some former estimates should be considered. Geologists have usually estimated the amount of oil left in a reservoir after exhaustion by flowing and pumping, by simply assuming that the pores of the productive portions of the sand were originally 100 per cent filled wtih oil and dissolved gas. This assumption considered that the pores of the sand contained oil, and no water.

Possible Fields

Modern methods of laboratory analysis of reservoir rocks have disclosed the fact that apparently no reservoir of consolidated sandstone can be found completely saturated with oil, even where the pressures preclude the possibility of free gas. In discussions of oil mining possibilities, certain American fields are usually referred to as being the most likely places for a trial of the method. It has been found from core analyses that in the better part of these fields the sand often contains the following fluids, expressed in terms of barrels per acre for each foot thickness of sand: Oil, 500 bbls.; water, 400 bbls., and gas, 400 bbls. These data have been determined by laboratory methods that will be described in another paper by the writer and have been substantiated by water-flooding developments and subsequent coring of flooded areas to estimate the amount of oil remaining in the sand. Since water is now found to be occupying a large part of the pore space it is no longer safe to assume that saturated oil occupies all of the pore space in new fields. Core analyses are therefore necessary in estimating the amounts of oil left in exhausted fields that are being considered as oil mining prospects.

If the earlier estimates were made by assuming 100 per cent initial saturation and allowing deduction for the produced oil, a value for the amount of residual oil per acre available for mining would obviously need to be revised downward. Incidentally, the presence of this water in oil sands is not incompatible with geological evidence and suggest a new method of estimating reserves and productive yields of new fields. For instance, in East Texas, if a series of complete cores were to be taken and analyzed it is probable that after reducing the pressure of the sand samples to atmospheric, the remaining oil would be in the magnitude of the amount of oil left in the sand after exhaustion by pumping. However, East Texas has a natural water drive and this, too, could be duplicated in the laboratory and its effects determined. The original water content could be determined and the pore space occupied by oil could be considered as the difference between the porosity and the water content. If the residual oil content were subtracted from the original estimated quantity, a recovery figure would be obtained not greatly different from the actual recoveries in similar fields which have been exhausted.

Recoverable Residue

The amount of residual oil in an old field which can be removed by underground mining methods is probably open to argument, but it seems that the use of modern surface methods could produce nearly as much oil as could be recovered by feasible subsurface methods.

Longwall mining, or complete removal of the standstone to the surface for distillation or crushing and extracting, would make available the full 500 or so barrels per acre-foot from typical fields. A discussion of this final and thorough method of mining has been offered by Mr. Rice and the estimated costs preclude present consideration. This method of oil mining, however, is the only proposed one, in the writer's opinion, that can recover the greater part of the oil left in the rich and shallow oil fields. The Ranney process appears to be the best alternative method, but it seems to have several physical limitations when critically considered as a competitor to water flooding. Some of these limitations have been obvious, but during the past year or two much work has been done that can help us to predict what will happen when we attempt to use methods of secondary recovery.

The writer has had the opportunity of making several thousand permeability tests and recovery experiments on cores from several important oil horizons, and it appears that some conclusions may be proposed in regard to the application of underground mining methods:

1. Water flooding of the reservoir in some way or other is necessary to produce a large percentage of the oil.
2. In most consolidated sands low permeability in the direction of gravity makes it unlikely to expect much additional recovery without the application of considerable driving pressure.
3. The driving pressure must be of an excessive order of magnitude, for instance, 300 or 400 pounds per square inch, in order to flush the sand within a reasonable time.
4. Regardless of the number of wells that are drilled into the reservoir from the mine passages, the Ranney or similar processes are subject to the same limits[2] of areal efficiency that are forecast for a surface flooding network.
5. Although underground mining methods might enable the producer to remove the maximum amount of oil from the sand, the recovery would be due largely to the somewhat closer control of flow through layers and lenses of irregular permeability. In most cases, the intelligent development of a property by scientific surface methods will probably result in the production of nearly as much oil as could be produced by economical underground methods.

Laboratory Research

It is beyond the scope of this paper to fully develop these views on surface methods, but it might be well to touch on a few points. The experiences of Bradford producers in removing only 300 or 400 bbls. per acre by gas and air repressuring from territory that later yielded several thousand barrels per acre by water drive have been typical of what can be expected elsewhere if underground conditions permit the successful use of flooding. Extensive laboratory research has substantiated this fact and points to the idea that although there are many old fields in America where gas and air repressuring might be far superior to water flooding, these old fields unsuitable for water flooding are also unsuitable for underground mining methods that leave the sand in place.

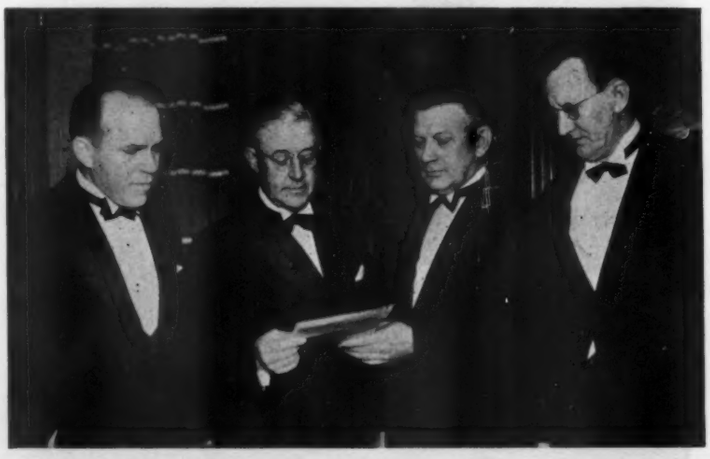
In most fields the oil sand is stratified and offers greater resistance to gravity drainage than loose, unconsolidated sands. In forcing the oil from the sand by water flooding through small holes, as in the case of the Ranney process, a row of such holes or wells would be drilled from underground rooms or passages near the producing formation. Both experience and theory in water flooding indicate that economic rates of recovery would necessitate pressures in excess of 100 pounds per square inch and it is probable that much higher pressures would be desirable.

With only a thin layer of competent strata to separate the pressured sand from the open passage, a rupture would likely to occur at points about the small well heads in the passages, or within the sand body, at any one of the many weak bedding planes. This danger is quite likely to be present and could condemn the whole idea of underground mining through drill holes from passages.

Muskat and Wyckoff[3] have shown that slightly less than three-fourths of the area of any five spot is washed by flood input-water at the time that the oil well begins to produce rapidly increasing amounts of water. They have demonstrated this thoroughly by laboratory experiment and the phenomenon has been observed in Bradford by actual experiment and field experience. It is significant that this peculiarity of the popular five spot pattern can be observed not only in the widely spaced surface developments but also in the close spacings of 200 wells per acre such as suggested for underground mining. No matter how closely the drill holes are spaced, one-fourth of the area in a five spot pattern will be unflooded and the oil contained in that space will be trapped between the wells at the time that the input-water should appear.

However, by drilling such a great number of wells per acre, each streak of sand could be given individual attention if its production possibilities were known. By such close attention to reservoir variations it is obvious that more oil might be removed than could be removed by any present surface manipulations. The advantages of cleaning each layer of reservoir rock might also be obtained through surface wells, closely spaced and properly packed, if it can be found that the underground connections

(Continued on Page 32)



Officers of the Dallas Petroleum Club at the formal opening of the club. Reading from left to right: Russell S. McFarland, vice president of the club (president, Texas Seaboard Oil Co.); Harry Morlang, secretary-treasurer (Oil Well Supply Co.); D. A. Little, president of the club (president, Magnolia Petroleum Co.); R. B. Whitehead, vice president of the club (chief geologist, Atlantic Oil & Refining Co.).

The Petroleum Club, composed of 100 resident members and 50 non-resident, have quarters in the east wing of the seventeenth floor of the Baker Hotel.

[1] "Mining Petroleum by Underground Methods," Rice, G. B.—U.S.B.M. Bulletin 351, Page 151 (1932).

[2] R. D. Wyckoff, H. G. Botset, M. Muskat—A.I.M.E. Tech. Pub. No. 507 (1933).

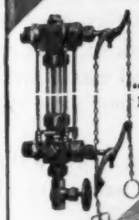
[3] "A Theoretical Analysis of Water Flooding Networks"—A.I.M.E. Tech. Pub. No. 507 (1933).

"ALL IRON" LIQUID LEVEL GAGE

FOR 500 LBS. WORKING PRESSURE AT 750° F.

Automatic Injector

Ejector, Syphon or Jet Pump


"Navy Type" Liquid Level Gage

"Safeguard" Automatic Liquid Level Gage

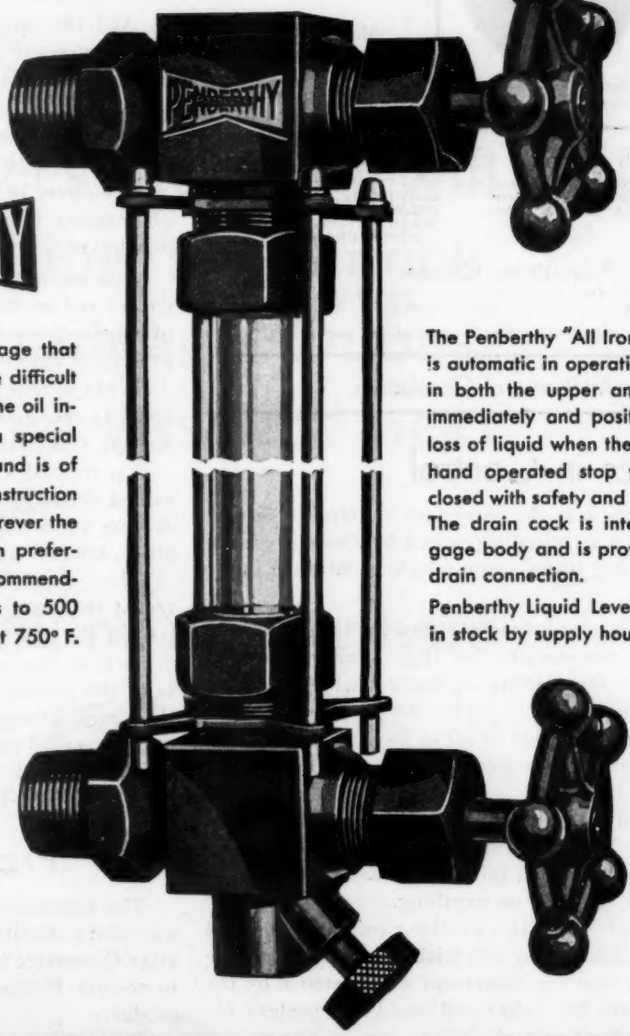
"All-Iron" Automatic Liquid Level Gage

Gas Engine Lubricator

Snap Lever Oiler

Plain Brass Oil Cup

Plain Compression Grease Cup



PENBERTHY PRODUCTS

HERE is a liquid level gage that is ideally suited to the difficult service requirements of the oil industry. It is made from a special high strength alloy iron and is of exceptionally rugged construction throughout. It is used wherever the liquid handled makes iron preferable to brass, and is recommended for working pressures to 500 pounds per square inch at 750° F.

The Penberthy "All Iron" Liquid Level Gage is automatic in operation. Ball check valves in both the upper and lower body close immediately and positively to prevent the loss of liquid when the glass is broken; the hand operated stop valves may then be closed with safety and a new glass inserted. The drain cock is integral with the lower gage body and is provided with thread for drain connection.

Penberthy Liquid Level Gages are carried in stock by supply houses everywhere.

PENBERTHY INJECTOR COMPANY

Manufacturers of Quality Products Since 1886

DETROIT, MICHIGAN WINDSOR, ONTARIO

Screw Plunger Grease Cup

Spring Compression Grease Cup

Automatic Electric Sump Pump

Automatic Cellar Drainer (Water or Steam Operated)

Dipless Air Cock

The Oil and Gas Journal

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published Weekly By

THE PETROLEUM PUBLISHING COMPANY

114-16 West Second Street, Tulsa, Oklahoma

P. C. LAUINGER, President and Gen. Mgr.
ANDREW M. ROWLEY, Editor
W. T. ANDERSON, Managing Editor
JAMES McINTYRE, Consulting Editor
C. O. WILLSON, Refinery Editor
L. G. E. BIGNELL, Petroleum Engr. Editor

Established 1910 by PATRICK C. BOYLE

E. KLAPPENBACH, Advertising Manager
C. K. FRANCIS, Ph.D., Technical Editor
W. T. ZIEGENHAIN, Associate Editor
THOMAS F. SMILEY, Associate Editor
M. F. BALDWIN, Circulation Manager
S. H. ROURKE, Business Manager

Branch Editorial Offices

CANADA, Victor Lauriston
DENVER, Tolbert R. Ingram
FT. WORTH, L. E. Bredberg
HOUSTON, Neil Williams
CHICAGO
LOS ANGELES, L. P. Stockman
NEW YORK, C. O. Willson
MICHIGAN, Paul A. Elliott
OIL CITY, Robert C. Conine
MINDEN, La., J. R. Crumpton
TOLEDO, George A. Whitney
WASHINGTON, Hugh D. Mallon
PITTSBURGH

Branch Advertising Offices

NEW YORK CITY, C. L. Cain
CHICAGO, C. R. Farmer
CLEVELAND, Howard Markt
HOUSTON, Paul T. Putnam
LOS ANGELES, J. H. Tinkham

(For representatives' complete addresses see contents page)

Member, Audit Bureau of Circulations

States in Control

The big thing accomplished at the interstate conference in Dallas was that an agreement was actually reached by the representatives of the nine oil producing states recommending entrance into a compact on oil regulation.

The need has been for the establishment of some point of common contact for discussion and consideration of their similar problems, bringing home to each state the identity of interest which each has in the oil industry's condition.

Instead of regarding the production of oil as local to each state a compact will impress the necessity for a common point of view in the general interest.

When Governor Marland called the first meeting at Ponca City it was loudly proclaimed by Mr. Ickes that nothing could come of it, that compacts had been tried and had failed, and that there was no hope whatever of the states agreeing on anything.

The agreement reached at Dallas is a crushing refutation of that false prophecy inspired presumably by the wish being father to the thought. It might be added that the agreement was hastened by the unanimous desire to repudiate Mr. Ickes and avoid any pretext for his continued clamor for Federal control.

The differences of opinion, happily compromised in the final resolutions, over limitation of production to avoid physical waste or to market demand, were not incompatible with a compact which properly leaves each state obligated only upon the terms of joint agreement. Heretofore there has not even been contact on any single point in the program.

Once a compact is formed it will focus the attention of the states upon the problem of oil regulation, exposing cause and effect, and indicating what needs to be done.

Co-ordination to promote maximum recovery is broad enough to go to the roots of the matter and even to bring about the reform of the archaic law of capture which has been so often diagnosed as the most virulent germ of overproduction.

The facts being as they are, with the conditions needed for their correction so plainly evident, the method of approach is not so important as the obtaining of the desired results.

Governor Allred demonstrated that when he made the changes required to enable Texas to join the compact. Faithful observance of a compact to obtain the maximum ultimate recovery of oil and gas will be an effective restriction on production, backed by a law preventing the shipment of oil produced in violation of state regulations.

Such a compact, loyally observed, would have kept East Texas under control from the start, would have saved Texas and the oil industry millions and conserved a reserve that has gone forever.

Owed to Oil

In the implied need for new taxes, a great deal of which could be avoided by cutting out administrative wastes and extravagances, duplications and overlapping, the oil industry seems to be the first victim both at Washington and in the states.

And the uninformed public blindly approves because as Clarel Mapes, general secretary of the Mid-Continent Oil & Gas Association, pointed out in a recent address, when people think of taxes on oil "they think in terms of the gusher but a tax on real estate must be based on what the average property will bear and not what the few very wealthy properties can pay."

Even here in Oklahoma which owes its development more to the oil industry than any other single factor there is the same lack of perception.

It is not at all exaggerating to say with Mr. Mapes that the discovery and production of oil has put Oklahoma a hundred years ahead of where it would have been without that advantage. The normal growth of agriculture and industry is much slower.

What is true of Oklahoma is to a large degree true also of the benefits received from the operations of the oil industry in Texas, Kansas, California, Arkansas, Louisiana and New Mexico.

Up to 1935 Oklahoma had produced 3,719,000,000 barrels of oil valued at $5,110,000,000. One-half, or $2,550,000,000 was required for drilling and equipping the wells. One-fourth was required for royalties, bonuses and leases paid to land owners.

These expenditures were reflected in the general trade and industry of the state, the new wealth created by oil representing 40 per cent of the new wealth created annually in Oklahoma.

It is to the interest of Oklahoma outside the oil industry, as it is of the people in other oil producing states, to encourage rather than burden the oil industry with excessive taxation, particularly at a time increased payrolls, increased costs and increased prices for material, are handicapping emergence from a period when the cost of production has exceeded for several years the average selling price.

Progress at Washington

The unanimous passage by the House of Representatives of the amended Connally bill as reported by the House Committee on Interstate Commerce indicates speedy enactment of this measure designed to restore Federal control over interstate shipment of "hot" oil or products.

Senator Connally was present during the House committee's consideration of amendments to his bill passed by the Senate and there is not expected to be any deadlock over effecting a compromise between the two Houses in conference committee.

The points of difference are the House provision authorizing the President to lift the prohibition on interstate commerce when the need for it ends, a provision which legal minds fear may be interpreted by the Supreme Court as again giving the executive unconstitutional legislative discretion, and the provision for confiscation of "hot" shipments.

It is unlikely, with both Houses convinced of the necessity for prompt enactment permitting resumed Federal control over these shipments, that action will be long delayed in controversy over these points.

The fact that in neither House was any effort made to enlarge Federal control of the industry as urged by the petroleum administration is significant.

TEN new Dubbs licensees (at least) will be selling anti-knock, long mileage Dubbs-cracked gasoline next summer

It will be mighty hard to sell poor gasoline in their territories

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

NEWS FROM FOREIGN LANDS

ITALY

Italy's new oil policy may have something to do with the friction between Italy and Abyssinia according to European observers. The Italian government starting the latter part of 1933 inaugurated a policy of developing a domestic petroleum industry. Large bonuses are given to the producers of crude oil. So far there has been little tangible results, the present daily being about 700 bbls. daily.

The government has also outlined a plan to develop a local refining industry with the view of reducing imports to a minimum. It is anticipated that before the end of the year, three or more refineries will be built or under construction in Italy. In connection with this refinery construction by private companies the government is anxious to develop a large supply of crude oil which would be available in time of emergency. So far it is said the government has not been able to solve this problem satisfactorily.

The government is willing to aid in financing any program which would aid in the solution of this problem along the lines which the French government used in becoming one of the principal owners of the Iraq concession and development. The Italian government is said to be interested in the B.O.D. concession in Iraq but so far no plan has been adopted to determine the production of this property. The possibilities of Abyssinia from the standpoint of production have been reported favorably. The supply if developed in substantial quantities would be readily available to Italy. The government has denied that this situation has anything to do with the difficulties between the two countries.

GERMANY

The German government may establish a monopoly in fuel oil, gasoline and other petroleum products, according to reports from that country. This action, it is said, is under consideration in connection with the efforts being made to improve the trade balance of Germany. At present an excess of imports has resulted in many companies having large amounts of marks frozen in Germany. A change in this situation is considered necessary to improve domestic conditions.

The German government's interest centers in the oil situation because the imports of petroleum products to supply domestic requirements constitute a large part of the total imports of the country. Should a monopoly of one or more products be established it is said that the plan would favor those companies which are in a position to buy steel and other products manufactured in Germany. Companies would be allowed to import petroleum products on a basis of their purchases in Germany, the object being to establish a more favorable trade balance. In regard to oil companies it is pointed out that German manufacturers are now in a position to furnish oil field and refinery equipment.

This development has caused considerable uneasiness among companies now importing and operating in Germany. In connection with a recent visit to Germany of Sir Henry Deterding, head of the Royal Dutch-Shell group, a large distributor in Germany, it was reported that the Shell interests would take a substantial part of the business if a monopoly was established.

The German government is also endeavoring to reduce imports of petroleum products by increasing crude oil production and also increasing the production of synthetic gasoline and other products. The crude oil production was increased 35 per cent last year, partially due to the government's co-operation and there has also been a large increase in the production of oils through the hydrogenation of coal. Through subsidized operations it is planned to test our deeper sands during the coming year and considerable wildcat drilling in new territory will be carried on.

At present this domestic production of crude oil and synthetic oils supplies only a small part of the total requirements. The gain in domestic production in fact has not been as rapid as the increase in the domestic consumption of petroleum products.

MANCHUKUO

Apparently relieving Anglo-Dutch fears of exclusion from the Manchukuan oil market, the State Oil Monopoly has announced official allotments permitting American, Dutch and Soviet wholesale oil companies quotas totaling 59 per cent, against 14 per cent, for Japanese Manchukuan interests.

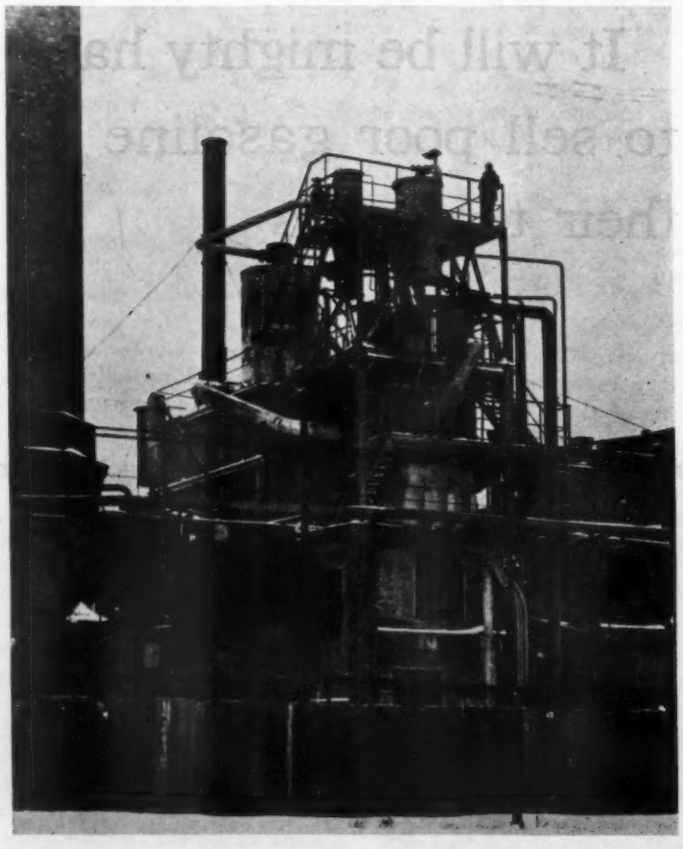
Allotments were announced as follows: Standard Oil Co. of New Jersey, 21 per cent; Asiatic Oil Co. (Shell), 18 per cent; Texas Co., 14 per cent; Soviet Oil Co., 6 per cent; Japanese Manchukuan Oil Co., 14 per cent, and all others 6 per cent.

JAPAN

The Japanese Association of Mineral Oil Refiners was established recently, consisting of the Nippon Oil Co., Ltd., and 25 other petroleum refiners. The association aims at an agreement on the sale of light oil and machine oil, the following prices per case being fixed for one year from November 1: Light oil, 3.10 yen; machine oil B, 4.60 yen; and machine oil C, 3.80 yen.

RUMANIA

Although there is still great drilling activity throughout the Rumanian fields, there were not so many new wells completed during December as in preceding months. The most important were those of Unirea (Phoenix group), which brought in No. 17 Boldesti-Harsa with an initial daily output of 180 tons and Nos. 199 and 200 Gura Ocnitzei, each of which gave 240 tons. The Creditul Minier completed another good producer in the important new area of Viforata, its No. 11 well having an initial of 150 tons, later raised to 175 tons, the pressure on the tubing being reported by the Moniteur du Petrole Rumanin as 55 atm. and that on the casing as 87 atm. No. 5 Viforata, which came in during November, is reported as still yielding 165 tons. Steaua Romana's No. 1 Buscani exploration well is maintaining a steady output of 160 tons per day, and a new well, No. 338 Sft. Gheorghe, had an initial of 100 tons. Another interesting Buscani exploration is the Vornicu Margineni well being drilled by Concordia; when last reported it was at 1,240 meters, the Steaua Romana well having struck oil at 1,758 meters. Concordia also brought in during December No. 605 G. O. Valea la Desagi, with a yield of 90 tons per day.



High vacuum distillation unit at the Budapest, Hungary, refinery of "Fanto Vereinigte Ungarische Mineraloelfabriken. This is now owned by N. V. Maatschappij voor Beheer van Effecten, Bureau D'Etudes M. B. E. with headquarters in Amsterdam and Paris

PRODUCTION

The Petroleum Times has compiled the following table showing the 1934 and 1933 crude oil production of the principal British oil companies (data in barrels based on weekly reports):

	1934	1933
Anglo-Persian	7,537,000	7,086,706
Venezuela Oil Concessions	5,097,075	4,659,420
Mexican Eagle	2,443,143	2,038,011
Astra Romana	1,736,870	1,445,043
Steaua Romana	1,183,703	1,121,926
Romana-Americana	969,884	578,807
Phoenix Group	911,225	724,646
Apex (Trinidad)	539,480	540,930
Trinidad Leaseholds	432,286	383,400
British Controlled Oilfields, Ltd.	334,385	426,940
Lobitos Oilfields, Ltd.	276,041	266,200
Anglo-Egyptian	210,838	228,790
Anglo-Ecuadorian	198,086	199,481
Kern River Group	160,485	138,462

TANKERS

At the close of 1934 there were 36 motor-driven tankers under construction with a total capacity of 287,670 tons, according to Lloyd's Register. The number of tankers which will use oil as fuel far outnumber the steam-driven tankers with eight under construction having a total capacity of 50,400 tons.

The following table gives a list of motor-driven tankers under construction at the close of 1934:

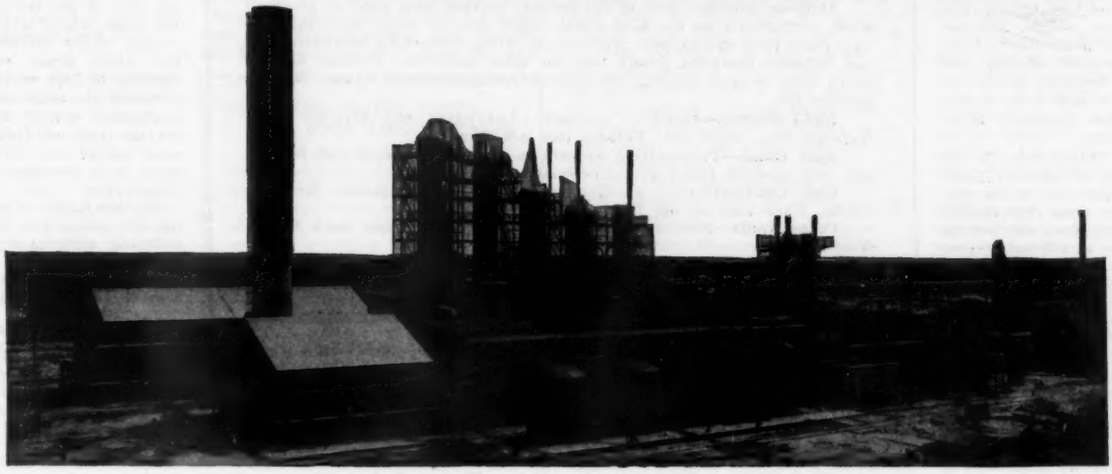
	No.	Tons
Great Britain	10	77,900
Argentina	1	2,550
Denmark	6	52,900
France	1	13,000
Germany	7	48,150
Holland	4	33,870
Italy	1	8,200
Japan	1	10,000
Norway	1	6,400
Sweden	4	34,700
Total	36	287,670

IRAQ

The Petroleum Times of London says: "We estimate from Continental Customs data that a total not far short of 600,000 tons of crude oil was dispatched from the Iraq oil field from the time of the departure of the first tanker for France in August to the end of 1934. So far as we can check, France received about 500,000 tons, of which 300,000 tons came from Tripoli and about 200,000 tons from Haifa. It would appear that one or possibly two cargoes also went to other Continental ports. This rate of exportation is higher than most of us imagined, but it will be a greater surprise still to many to learn that, according to our estimates, British refineries took around 60,000 tons of Iraq crude between the middle of November and the end of the year. Incidentally that amount would account for about 12,400,000 gallons out of the total of 26,000,000 gallons from 'other foreign' countries undisclosed last year. It is not likely that the British imports will remain regular at anything like this rate during the current year, but it is certain that Iraq crude will be a feature of great interest to the industry in the future. Under present conditions it will naturally be concealed under 'other foreign.' The Board of Trade might consider this new factor in British oil imports for inclusion in the 1936 returns. It may well be that we are now witnessing the beginning of a vital change in our sources of oil supply."

IN THE UNITED STATES

During 1934 one of the world's largest combination cracking units began operation under a Gasoline Products Company license.



LICENSES granted under United States and Foreign Patents for: Cross • de Florez • Holmes-Manley • Tube and Tank Cracking Processes and Combination Cracking Units.

Licensing Agents:
The M. W. KELLOGG CO.
225 Broadway · New York
or its
European Representative:
Compagnie Technique des Petroles · 134 Boulevard Haussmann · Paris, France

Through Gasoline Products Company the results of experiments, developments and operating data of several of the major refinery organizations are coordinated and made available through license agreements.

This coordination of technical data makes possible the designing of combination cracking units embodying those features of design adapted to the individual problems of the refiner.

We suggest you investigate this comprehensive service before investing in cracking equipment.

GASOLINE PRODUCTS COMPANY

INCORPORATED

11 COMMERCE STREET · NEWARK, NEW JERSEY

Slow Refinery Market Prevails in Group 3 Area With Lubricants Beginning to Look Better

By T. F. SMILEY

Although some observers professed to see signs of a somewhat stronger gasoline market in the Group 3 (Oklahoma) area this week, the tank car price of low-octane U. S. Motor was still around 3¼ cents, where it had been bogged since the early part of the month. Inconsequential changes were noticeable in other grades. Naturals dropped sharply and fuels were off. The lubricant group was looking up. Furnace oils were having difficulty holding their position. Slowness prevailed generally.

A rise of about 23,000 bbls. in the daily crude production of the East Texas Field and reported increase in the output of illegal gasoline from that district were regarded without deep concern by many of the trade as significant of conditions likely soon to be corrected if plans already under way are carried to successful operation.

East Texas Agency Making Progress

The Independent Refiners Marketing Corp., a co-operative enterprise being organized to dispose of all gasoline lawfully made in East Texas, continued to be a subject of lively discussion. Many details remain to be worked out, but it was understood satisfactory progress was being made and that the next two weeks or so would see the plan in full operation. According to information given out this agency not only purposes to have all legal gasoline from East Texas absorbed by large oil interests of the Gulf Coast and the East, thus ending the practice of dumping surplus stocks in consuming areas of the Middle West and elsewhere, but it will throw the full weight of its influence against all illegal operations which have made East Texas the plague spot of the oil industry. Although skepticism concerning the feasibility of the program is expressed in some quarters, there are at the same time well-informed market students who see distinctly improved conditions as the probable outcome.

Refined Oil Market Barometer

Dullness pervades most of the refinery market, with gasoline generally weak, particularly on the East Coast, where distress stocks from the Gulf have made their appearance. Nearness of spring demand for lubricating oils and kerosene providing firmer tone for these materials. Furnace oils believed likely to start slipping, owing to overaccumulation of stocks. Natural gasoline off.

Mid-Continent.—Gasoline unsteady. Lubricants and kerosene firm. Naturals drop. Fuels off. Furnace oils lack firmness.

East Coast.—Price-cutting appears in gasoline, kerosene and furnace oils, with gasoline retail market especially weak.

Gulf Coast.—Distress gasoline available at shaded prices. Kerosene strong. Fuels and gas oils firm. Lubricants marking time.

Pennsylvania—Neutral seasonal demand falling. Bright stock better. Wax weak.

California.—Gasoline weak and spotty. Naturals weak.

Chicago.—Gasoline dull, but steady. Kerosene firm. Heating oils quiet.

Lubricating oils were displaying a firmer tone and in the case of the bright stocks their better position was concretely evidenced by a rise of a half-cent throughout the list. Neutrals and steam-refined stocks were steady.

A comparison of current lubricant prices with those prevailing a year ago discloses something more interesting than mere rise and fall of supply and demand. It reveals one of the many changes in automotive practice which have marked the history of motor-driven vehicles. The last year has witnessed a decided trend toward lighter lubricants. This has involved larger use of neutral oils with a corresponding diminution in the use of bright and steam-refined stocks.

Neutrals are commanding about 2¼ cents a gallon more now than they did in February, 1934, but bright stocks are running about 9¾ cents below the levels of this time last year. There is almost as great disparity in steam-refined prices.

In their former demand for heavy lubricating oils motorists might be said to have been actuated by whims or hasty conclusions rather than by engineering advice. They took it for granted that the heavier the oil the more pronounced its capacity to form and maintain a lubricating film, and as this lubricating film was what they wanted they figured they were getting more for their money when they had an extremely thick oil poured into the crankcase.

But experiment demonstrated that while an admixture of the heavier grades of lubricants did enhance the neutral's ability to maintain a film this fact was overemphasized, because there was a point beyond which the advantages of a highly durable film were nullified by the slowness of the heavy oil in forming any film at all. The tough, thick oil resulting from a heavy blend of bright or steam-refined stock made it difficult, especially in cold weather, for the car owner to get his motor to turn in starting and to get the lubricant flowing to the point where it was needed. At the bottom of the matter lay the fact that the whole range of lubricating oils, whether of high or low viscosity, attain virtually the same consistency upon the application of heat, and it took longer to get the now old-fashioned heavy lubricant heated to a film-forming consistency, with resultant likelihood of frictional wear.

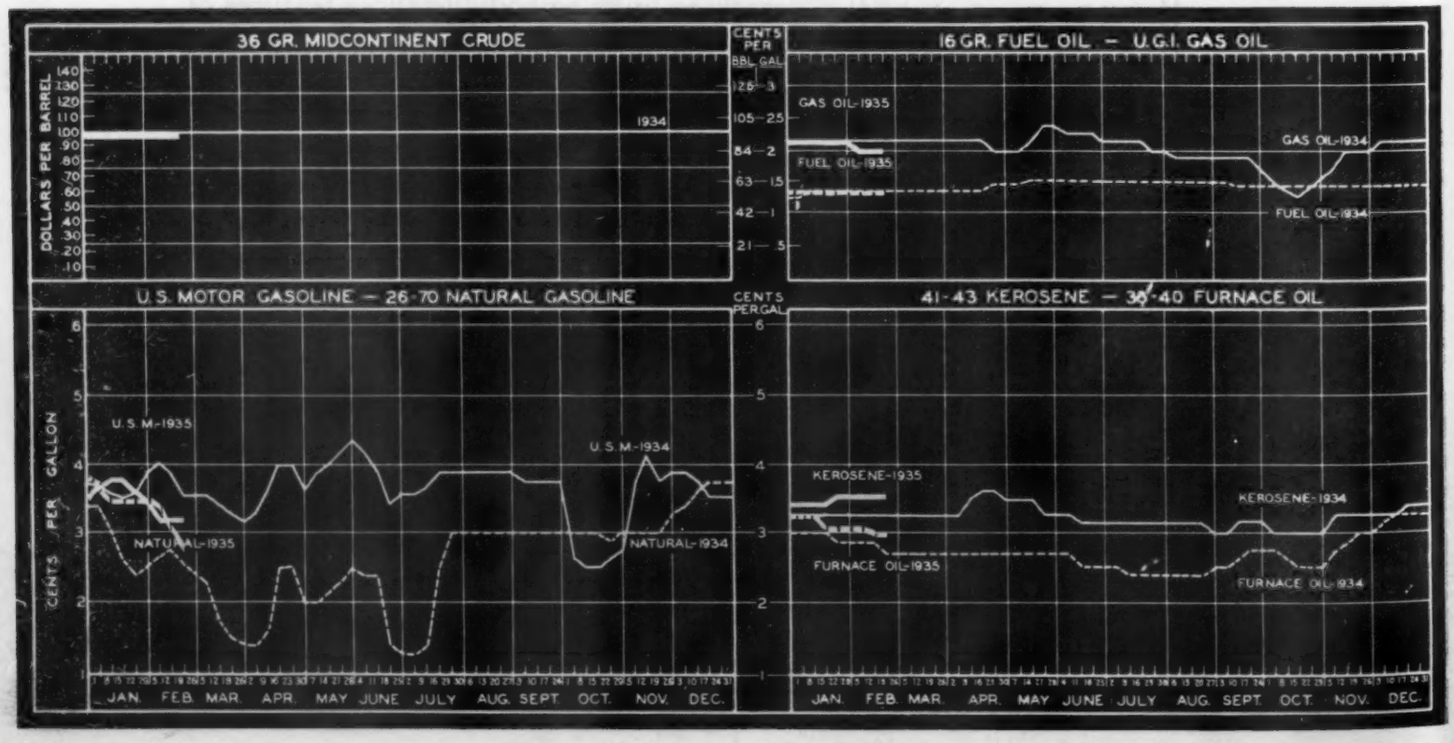
Another factor in the shift of lubricating oil prices lies in the tight-fitting, delicately adjusted motor which has supplanted its relatively loose-fitting predecessor. The old motor was better able to move through the thick oil of earlier days.

Naturals in Another Dive

The downward slide of the naturals which began in late January was accelerated this week by the still further diminished demand for current production, quotations dropping three-eighths cent and in some cases a full half-cent. There was a feeling among manufacturers that the lower prices might attract a little new buying.

Although furnace oil quotations were unbroken, it was predicted that unless a blizzard struck consuming areas in the North prices would start to recede soon. There are said to be larger stocks of this material than normal demand can take care of, with the result that price concessions may be resorted to with a view of moving them before warm spring weather arrives. Kerosene was firm, with quotations still topping low-octane gasoline. Fuel oils exhibited weakness and the prices on several grades dropped 2½ to 5 cents a barrel. Wax was slow.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Gasoline Price Cutting on East Coast Ascribed to Presence of Cheap Material at the Gulf

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Feb. 18.—While no important changes were reported in the tank car postings on refined products by major refiners in this territory some scattered price cutting was reported from independent sources. The material involved included gasoline, kerosene and furnace oils.

In the case of gasoline the price shading was coming in sufficient volume to attract the attention of the trade generally. It was stated that middle octane gasoline was being offered at 5¾ cents in the New York Harbor area in tank car lots with similar quotations reported at other points along the Atlantic Seaboard. Major refiners are quoting a minimum of 6 cents for this grade and 6¼ cents for 65 octane and above. It was at first reported that the 5¾-cent material was low octane but investigations have shown that it has an octane rating of 62 or 63 with the C.F.R. test. A disturbance in dealer and retail gasoline prices at Boston is said to be due to the low prices prevailing at one or more terminals. The reported dealer prices in fact would indicate a terminal price of around 5 cents.

Low Gulf Prices

This development is blamed on the presence of low priced gasoline at the Gulf. As has been explained previously in these columns, the Gulf market reflects in part, the East Texas situation. All the reports of low prices known to the writer have been denied by those who were supposed to be offering the gasoline. It appears certain, however, that middle octane gasoline, part of which is 400 endpoint material, has been bought at the Gulf at 4½ cents and possibly less. This price is too low to support a 6-cent quotation along the Atlantic Seaboard. The usual reported price at the Gulf Coast by major factors is 5 cents, established before eastern refiners advanced their quotations to their present levels last month.

Foreign Situation

One sales manager familiar with foreign operating conditions says that part of the trouble at the Gulf Coast is due to the slow foreign buying at that point. This situation is different to gauge because there has been little spot gasoline buying at the Gulf for export movement in a year or more. So far as gasoline exports are concerned they have been declining steadily from this country since 1930. In 1934 they were less than 38 per cent of the peak year of 1930.

This sales manager says that the movement so far as it affects spot markets, has been especially dull since the first of the year. He explains that in addition to the slow spot trading, several contracts which have recently expired have not been renewed. The increasing quantities of Iraq crude oil available to European refiners is given as the main explanation for this situation. Iraq crude oil started coming on the market at the Tripoli terminal of the pipe line of the Iraq Petroleum Co., Ltd., last August and since that time deliveries have also started at Haifa, the other Mediterranean terminal of the line. The Tripoli terminal is supposed to be making deliveries at this time approaching its capacity of 40,000 bbls. daily and the Haifa terminal is scheduled to be making similar deliveries before summer starts.

Although there may be some delay in arriving at the capacity basis it is certain that the line will be delivering around 75,000 bbls. of crude oil daily in the near future. It is also certain that this crude oil will be absorbed promptly by European refineries. The owners of the line, which includes the major oil interests of Europe, are obligated to furnish outlets for the crude and they will do so even if they have to shut off some of their owned or controlled supplies in other countries. This in effect has already happened.

European Observers Pessimistic

Some European observers have been pessimistic regarding the probable reaction of European markets to Iraq crude oil for over a year. Rumanian producers and refiners have been particularly concerned. It is claimed that the cost of production will be much less than in the case of Rumanian crude, which is heavily taxed and lacks adequate pipe line facilities to provide cheap transportation from the fields to the coast. The Iraq crude is within a few hundred miles of all the European refiners and in this respect has a distinct advantage over crude coming from South America, Persia, United States and the Far East. There can be no argument as to the strong competitive position of the Iraq crude oil and its refinery products in European markets.

It is assumed that as the crude comes on the market, smaller quantities of crude oil will be required from the countries mentioned. These countries naturally will endeavor to find new outlets and this cycle is the basis for the conclusion that competition will become more keen with the usual reductions in prices.

French Output

The bulk of the Iraq crude oil will be refined in France. Several of the refineries which have been completed there over the past three years were built in expectation of the new crude oil supply in which the French government has an interest through its control of a company which is one of the four major owners of the Iraq company. These new refineries have been operating with crude oil coming from several countries including United States. As the gasoline output of these plants increased, exports from the United States to France, which was the largest importer of gasoline in Continental Europe previous to 1931, have decreased.

Not all the French refineries have been completed and not all are operating to capacity. Assuming a capacity operating basis with the availability of Iraq crude oil and it is apparent that still smaller quantities of gasoline would be required from the United States and other refining centers.

Major interests connected with the Iraq development have endeavored to allay fears of other oil interests in Europe by stating that the crude and refined products would be taken care of in an orderly manner. Unfortunately this does not detract from the fact that if this new supply represents surplus, other interests will have to contract their operations an equivalent amount, or a demoralized market will result. There is the further disturbing factor that the trend in crude oil production is up in Russia, Rumania and South America which with the United States, have in the past supplied the bulk of the petroleum products consumed in Europe and adjoining markets.

The Brighter Side

On the optimistic side is the fact that practically all European countries are showing substantial increases in consumption of gasoline and other petroleum products. Despite high taxes on motor vehicles and motor fuels these European countries are becoming more and more motor minded and it is possible that before the end of 1935 this gain will largely absorb the increased supplies available from Iraq.

Taking the most optimistic view possible regarding the Iraq situation, it is nevertheless apparent that the United States refiners cannot look to foreign markets for an increased gasoline demand in 1935. A continued decrease in 1935 is more probable. If domestic markets are to be kept in balance this situation must be properly gauged from month to month so that surpluses will not accumulate at the Gulf Coast to be dumped on the coastwise markets at ruinous prices. This is the immediate problem which confronts the eastern markets at this time.

GASOLINE PRICES DOWN IN EAST COAST STATES

NEW YORK, Feb. 19.—Additional weakness developed in the gasoline market here today when major distributors reduced gasoline service station and posted dealer prices from 1½ to 2 cents per gallon. This action followed a reduction of one-half cent yesterday in New York and New England.

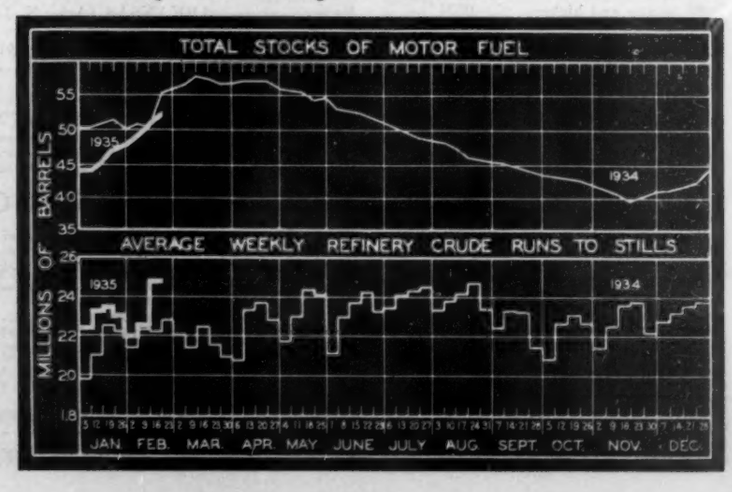
The new prices for metropolitan New York effective today, including all taxes, are Manhattan, Bronx, Westchester and Nassau Counties, 11¾ cents posted dealer and 14½ cents service station; Brooklyn, Queens, posted dealer 11½ cents and service station 14 cents; Suffolk County, 12¼ cents posted dealer and 15 cents service station; Staten Island, posted dealer 13 cents, service station 16½.

In addition to the posted dealer and service station prices, tank car quotations for New York and New England delivery were reduced one-fourth cent. It is feared that the service station price reductions will spread to Boston and several other points in New England and upper New York State.

American Petroleum Institute Weekly Refinery Statistics

Week Ending February 16, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	478,000	15,369,000	10,257,000
Appalachian	93.3	103,000	2,123,000	1,004,000
Indiana, Illinois, Kentucky	94.6	304,000	9,177,000	4,262,000
Oklahoma, Kansas, Missouri	83.7	248,000	5,134,000	3,914,000
Inland Texas	47.6	97,000	1,394,000	1,824,000
Texas Gulf	97.7	559,000	5,849,000	9,131,000
Louisiana Gulf	96.4	113,000	1,547,000	4,036,000
North Louisiana and Arkansas	83.7	37,000	267,000	448,000
Rocky Mountain	66.7	40,000	853,000	700,000
California	96.9	461,000	10,703,000	65,310,000
Total United States	89.8	2,440,000	52,416,000	100,886,000



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
U. S. Motor grades:				
Below 63 octane	.03¼	.03½	.03¼	.03½
63-70 octane	.04⅜	.04⅝	.04⅜	.04½
60-62 400 grades:				
Below 63 octane	.03⅜	.03½	.03⅜	.03½
63-70 octane	.04¼	.04½	.04¼	.04½
64-66 375	.03⅞	.04	.03¾	.04
68-70 360	.04	.04¼	.03⅞	.04¼
NORTH TEXAS—				
U. S. Motor grades:				
Below 63 octane	.03¼	.03½	.03¼	.03½
63-70 octane	.04⅛	.04⅜	.04⅛	.04¼
60-62 400	.03⅜	.03½	.03⅜	.03¼
64-66 375	.03¾	.04	.03¾	.04
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.04¼	.04⅜	.04¼	.04⅜
63-70 octane	.05⅜		.05⅜	
60-62 400	.04¼	.04½	.04¼	.04½
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.04¼	.04⅜	.04¼	.04⅜
63-70 octane	.05⅜		.05⅜	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 63 octane	.03¼	.03½	.03¼	.03½
63-70 octane	.04¼	.04⅜	.04¼	.04½
60-62 400	.03¼	.03½	.03⅜	.03½
64-66 375	.03⅜	.04	.03¾	.04
68-70 360	.04	.04¼	.04	.04¼
Aviation fighting grade	.04⅜	.05	.04¾	.05
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.04½	.04⅝	.04½	.04⅝
60-64.9 octane	.05⅝		.05⅝	
65-70 octane	.06		.06	
68-70 350	.05½		.05½	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.07	.08	.07	.08
58-60 400	.08	.09	.08	.09
EAST COAST—				
U. S. Motor, below 60 octane:				
*New York	.05½		.05¾	
Baltimore	.05¼		.05¼	
U. S. Motor, 60-64 octane:				
*New York (Bayonne)	†.05¾		†.06	
Philadelphia	.06		.06	
Boston	.05¾	.06	.06	.06¼
Baltimore	.06		.06	
Charleston, S. C.	.06		.06	
U. S. Motor, 65 and above:				
*New York	‡.06		‡.06¼	
Philadelphia	.06¼		.06¼	
Boston	.06	.06¼	.06¼	.06½
Baltimore	.06¼		.06¼	
Charleston, S. C.	.06¼		.06¼	

*All grades of gasoline one-fourth cent less for small barge shipments.
†For New Jersey delivery, 6¼ cents.
‡For New Jersey delivery, 6½ cents.

GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.04¾	.05	.04¾	.05
60-64.9 octane	.05	.05¼	.05	.05¼
65 octane and higher	.05¼		.05¼	

Naphthas

	Feb. 19		Feb. 12	
PENNSYLVANIA (inland refineries)—				
50-52 (blending)	.04	.04¼	.04	.04¼
52-54 450 (blending)	.04	.04¼	.04	.04¼
54-56 450 (blending)	.04	.04¼	.04	.04¼
50-52 450 (blending)	.04	.04¼	.04	.04¼
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.03½	.04	.03½	.04
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 320 e.p.	.06¾	.07	.06¾	.07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07¾	.08	.07¾	.08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08¾	.09	.08¾	.09
Rubber, solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06¾	.07	.06¾	.07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
Pet. thinner, 290-300 i.b.p., 415 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 330 e.p.	.06¾	.07	.06¾	.07
Petroleum spirits	.05¾	.06	.05¾	.06

Natural Gasolines

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
Grade 26-70	.02¾	.03	.03⅛	.03¼
Grade 18-55	.03¼	.03⅜	.03¾	.04
Low vapor pressure grades:				
14 lb. v.p. (max.)	.03¾	.04	.04⅛	.04⅜
12 lb. v.p. (max.)	.04	.04¼	.04½	
NORTH TEXAS—				
Grade 26-70	.02½	.02⅝	.02⅞	.03
Grade 18-55	.03	.03¼	.03½	.03¾
Low vapor pressure grades:				
14 lb. v.p. (max.)	.03⅜	.03½	.03¾	.04
12 lb. v.p. (max.)	.03¾	.04	.04¼	
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
Grade 26-70	.03		.03⅜	.03⅝
CALIFORNIA—				
75-85 375	.06	.06½	.06½	.06¾

Kerosenes

(All kerosenes water white)

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
41-43	.03½	.03⅝	.03½	.03⅝
42-44	.03⅝	.03¾	.03⅝	.03¾
NORTH TEXAS—				
40-41	.03¼	.03⅜	.03¼	.03⅜
41-43	.03½	.03⅝	.03½	.03⅝
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03¾	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04⅝	.04¾	.04⅝	.04¾
46	.04¾	.04⅞	.04¾	.04⅞
47	.04⅞	.05	.04⅞	.05
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03½	.03¾	.03½	.03¾
42-44	.03⅝	.03⅞	.03⅝	.03⅞
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04¾	.05¼	.04¾	.05¼
NEW YORK (Bayonne, N. J.)—				
41-43	.06	.06¼	.$6¼	
GULF COAST (domestic)—				
41-43	.04¾	.05	.04¾	.05

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	Feb. 19	Feb. 12
Pile run	6.00	6.00
Direct from still	7.00	7.00
Egg, nut, pea	8.50	8.50
Lump	8.50	8.50

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
32-36 straw	.02⅞	.03	.02⅞	.03
36-38 straw	.03	.03⅛	.03	.03⅛
38-40 straw	.03	.03⅛	.03	.03⅛
38-40 prime white	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—				
38-40 straw	.03⅛	.03¼	.03⅛	.03¼
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
36-40 furnace oil	.02⅞	.03	.02⅞	.03
ARKANSAS (Ark., N. La. & Miss. del.)—				
32-36 furnace oil	.02⅞	.03	.02⅞	.03
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.03	.03⅛	.03⅛	.03¼
38-40 straw	.03	.03¼	.03⅛	.03¼
38-40 prime white	.03⅛	.03¼	.03¼	.03⅜
NEW YORK (Bayonne, N. J.)—				
No. 1	.06	.06¼	.06	.06¼
No. 2	.04¾		.04¾	
No. 4	.04¾		.04¾	

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gal, Diesel and fuel oils per bbl.)

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
32-36 gas oil, cracking stock	.02	.02⅛	.02	.02⅛
U.G.I. gas oil	.02	.02⅛	.02	.02⅛
32-36, zero to 15 gas oil	.02¾	.02⅞	.02¾	.02⅞
28-30, No. 3 burner oil	1.05	1.10	1.10	1.15
26-30, zero to 10 fuel oil	.95	1.00	.95	1.00
24-26 fuel oil	.75	.77½	.77½	.80
20-22 fuel oil	.70	.75	.72½	.75
Below 16 fuel oil	.60	.62½	.60	.62½
NORTH TEXAS—				
32-36 gas oil, industrial	.02⅛	.02¼	.02¼	.02¼
22-26 fuel oil	.65	.67½	.67½	.70
Below 20 fuel oil	.60	.62½	.60	.62½
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.03	.03⅛	.03	.03⅛
14-16 fuel oil	.70	.75	.70	.75
ARKANSAS (Ark., N. La. & Miss. del.)—				
30-32 gas oil, zero	.03	.03⅛	.03	.03⅛
32-36 gas oil	.02⅞	.03	.02⅞	.03
14-16 fuel oil	.65	.70	.70	.75
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.02	.02⅛	.02	.02⅛
28-30 zero to 10, fuel oil	1.05	1.10	1.05	1.10
26-28 zero to 10, fuel oil	.95	1.00	.95	1.00
22-26 zero to 10, fuel oil	.82½	.87½	.82½	.87½
18-22 zero to 10, fuel oil	.67½	.72½	.67½	.72½
Below 18 fuel oil	.57½	.62½	.57½	.62½

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel in all these areas.

PENNSYLVANIA (inland refineries)—				
30-40	.03¾	.03⅞	.03¾	.03⅞
CALIFORNIA—				
Los Angeles:				
30-34 gas oil per bbl.	1.10	1.26	1.10	1.26
27 plus Diesel	1.10	1.15	1.10	1.15
27 plus Diesel (bunkers)	1.13	1.20	1.13	1.20
12-16 (bunkers at tidewater)	.82½	.85	.82½	.85
10-16 (cargo lots)	.70	.75	.70	.75
12-17 (tank cars)	.62½	.80	.62½	.80
San Joaquin Valley:				
10-18 (tank cars)	.60	.70	.60	.70
San Francisco:				
27 plus Diesel per bbl.	1.15	1.20	1.15	1.20
27 plus Diesel (bunkers)	1.19		1.19	
10-16 (bunkers)	.90		.90	
GULF COAST—				
28-30 gas oil	.03½	.03⅝	.03½	.03⅝
28-30 Diesel (bunkers)	1.70		1.70	
Bunker C (bulk cargoes)	.85	.90	.85	.90
Bunker C (bunkers)	.95	1.00	.95	1.00
NEW YORK (Bayonne, N. J.)—				
27 plus, gas oil	.04¾		.04¾	
28-30, Diesel (lighterage 6½ cents per bbl.)	1.89		1.89	
28-30 Diesel (tank cars)	.04¾		.04¾	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.15		1.15	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
Zero to 10 Cold Test:				
150-3	.10		.10	
180-3	.11¼		.11¼	
180-4	.10¾		.10¾	
200-3	.11¾		.11¾	
200-4	.11¼		.11¼	
240-3	.13¾		.13¾	
240-4	.13¼		.13¼	
280-3	.14¾		.14¾	
280-4	.14		.14	
300-3½	.15¼		.15¼	
400-4	.17¼		.17¼	
100-2 paraffin oil	.05¾		.05¾	
15-20 Cold Test:				
200-3	.10¾		.10¾	
200-4	.10¼		.10¼	
240-3	.12¾		.12¾	
240-4	.12¼		.12¼	
280-3	.13¾		.13¾	
280-4	.13		.13	
GULF COAST—				
Pale Oils:				
200-3	.07	.07½	.07	.07½
300-3	.07½	.08	.07½	.08
500-3½	.08½	.09	.08½	.09
750-3½	.09	.09¼	.09	.09¼
1,200-3½	.09½	.09¾	.09½	.09¾
2,000-4	.09¾	.10	.09¾	.10
Red Oils:				
200-5-6	.07	.07¼	.07	.07¼
300-5-6	.07¼	.07½	.07¼	.07½
500-5-6	.08	.08½	.08	.08½
750	.08½	.09	.08½	.09
1,200-5-6	.09¼	.09½	.09¼	.09½
CALIFORNIA (moving to domestic market)—				
Pale Oils:				
100-2½-3	.12½	.14½	.12½	.14½
200-2½-3	.12½	.14½	.12½	.14½
300-3-3½	.12½	.14½	.12½	.14½
350-3-4	.12½	.14½	.12½	.14½
400-3-4	.12½	.14½	.12½	.14½
450-3-4	.12½	.14½	.12½	.14½
550-3-4	.12½	.14½	.12½	.14½
600-3-4	.12½	.14½	.12½	.14½
Red Oils:				
200-4-5	.12½	.14½	.12½	.14½

300-5-6	.12½	.14½	.12½	.14½
350-5-6	.12½	.14½	.12½	.14½
400-5-6	.12½	.14½	.12½	.14½
450-5-6	.12½	.14½	.12½	.14½
500-5-6	.12½	.14½	.12½	.14½
600-5-6½	.12½	.14½	.12½	.14½
700-6½ plus	.12½	.14½	.12½	.14½
750-6½ plus	.12½	.14½	.12½	.14½
900-6½ plus	.12½	.14½	.12½	.14½
PENNSYLVANIA—				
150 vis. at 70° F., 3 color, 400-405 flash:				
Zero pour test	.24	.24½	.24½	.25
10 pour test	.23	.23½	.23½	.24
15 pour test	.22½	.23	.23	.23½
25 pour test	.21½	.22	.22	.22½
180 vis. at 70° F., 3 color:				
25 pour test	.24½	.25	.24½	.25
200 vis. at 70° F., 3 color:				
Zero pour test	.29½	.30	.30½	.31
10 pour test	.28½	.29	.29½	.30
15 pour test	.28	.28½	.29	.29½
25 pour test	.27	.27½	.28	.28½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
Bright Stocks:				
190-200 D	.17		.16½	
150-160 D, 0-10	.14		.13½	
150-160 D, 10-25	.13½		.13	
150-160 24-40	.13		.12½	
150-160 E	.13		.12½	
Steam refined:				
630 light green (treated)	.07½	.08	.07½	.08
600 light green (untreated)	.06	.08	.06	.08
600 dark green (untreated)	.04½	.07	.04½	.07
PENNSYLVANIA—				
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash):				
10 pour test	.19	.19½	.19	.19½
15 pour test	.18	.18½	.18	.18½
20 pour test	.16½	.17	.16½	.17
25 pour test	.16	.16½	.16	.16½
Steam refined:				
600	.08½	.09½	.08½	.09½
650	.10½	.11½	.10½	.11½
600 Pennsylvania flash	.11½	.12½	.11½	.12½
630 flash	.16½	.17½	.16½	.17½
600 Warren E filtered	.12½	.13½	.12½	.13½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Feb. 19		Feb. 12	
124-126 white crude scale	.02¾	.03¼	.02¾	.03¼
PENNSYLVANIA—				
122-124	.0290	.0295	.0290	.0295
124-126	.0275		.0295	.0300
NEW YORK—				
Wax (a.m.p.) in bags fully refined:				
120-122	.0420	.0430	.0420	.0430
123-125	.0440	.0460	.0440	.0460
125-127	.0445	.0470	.0445	.0470
130-132	.05	.0510	.05	.0510
133-135	.0545	.0570	.0545	.0570
135-137	.0570	.0595	.0570	.0595
124-126 crude scale	.02⅞	.0300	.02⅞	.0300
Petrolatum in barrels in carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03	.03⅛	.03	.03⅛
Lily white	.06⅝	.06¾	.06⅝	.06¾
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅞	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 wax	.0490	.0500	.0490	.0500
125-127 wax	.0515	.0525	.0515	.0525
127-129 wax	.0530	.0540	.0530	.0540
130-132 wax	.0590	.0600	.0590	.0600
132-134 wax	.0615	.0625	.0615	.0625

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

Export Prices

GASOLINE

GULF COAST—	Feb. 19		Feb. 12	
U. S. Motor	.04¼	.04⅜	.04¼	.04⅜
60-62 400	.04⅜	.04½	.04⅜	.04½
61-63 390	.04½	.04⅝	.04½	.04⅝
64-66 375	.04¾	.04⅞	.04¾	.04⅞
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04	.04¼	.04	.04¼
55-65 octane	.04¼	.04½	.04¼	.04½
65-67 octane	.04½	.04¾	.04½	.04¾
67-69 octane	.04¾	.05	.04¾	.05
Above 69 octane	.05	.05¼	.05	.05¼
58-60 400 endpoint	.04¾	.05¼	.04¾	.05½
KEROSENE				
GULF COAST—				
41-43 prime white	.04¾	.04⅞	.04¾	.04⅞
41-43 water white	.04⅞	.05	.05	
44 water white	.05⅛	.05¼	.05½	.05¼
LOS ANGELES, CALIF.—				
41-43 water white	.04½	.04¾	.04½	.04¾
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.19	.19½	.19	.19½
600 S.R. unfiltered	.14½	.15	.14	.14½
650 S.R. unfiltered	.16½	.17	.16½	.17
600 flash S.R.	.17½	.18	.17½	.18
630 flash S.R.	.22	.22½	.22	.22½
Bright Stocks:				
8 color	.22	.22½	.22	.22½
6½ plus colors in dilution	.21	.21½	.21	.21½
NEUTRAL OILS				
200-3 color	.34½	.35	.34½	.35
150-3 color	.28½	.29	.28½	.29
PARAFFIN WAX (Fully Refined)				
NEW YORK (prices per pound):				
120-122 a.m.p.	.0405	.0425	.0405	.0425
123-125 a.m.p.	.0435	.0455	.0435	.0455
125-127 a.m.p.	.0440	.0465	.0440	.0465
128-130 a.m.p.	.04¾	.0490	.04¾	.0490
130-132 a.m.p.	.0495	.0505	.0495	.0505
133-135 a.m.p.	.0540	.0565	.0540	.0565
135-137 a.m.p.	.0565	.0590	.0565	.0590

Crude Oil Gravity Table

Gravity—	Oklahoma and Kansas 1	North Texas, Central Texas and East Central Texas 2	North Louisiana and Arkansas 3	Gray County, Texas 4	Carson, Hutchinson and Moore Counties, Texas 5	Conroe, Texas 6	Salt Creek, Wyo. 7	Gulf Coast, Texas and Louisiana 8	Gulf Coast, Texas and Louisiana 9	Cotton Valley, Louisiana 10
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.06	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.08	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Effective December 3, 1934, Panhandle Refining Co., purchasing oil in North Texas, posted below 29 degrees, 68 cents; 29-29.9 degrees, 70 cents, with 2 cents added for each additional degree up to 40 and over, at 92 cents.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Phiitex Oil Co., which begins with below 31° at 86 cents.

Column 1—Effective September 29, 1933, Texas Co. of Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma and Kansas; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phiitex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; October 1, by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective January 14, 1935, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03.

Column 3—Effective September 29, 1933, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 25°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day, Phiitex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phiitex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6—Effective September 29, 1933, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by Texas Co., which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29, 1933, by Stanolind Oil & Gas Co.

Column 8—Effective September 29, 1933, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana, 20-20.9°, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12; and in Cameron Meadows and Iowa, Louisiana, below 20°, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 29°, 76 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 20°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9—Effective September 30, 1933, Texas Co. (On September 29 Texas Co. has posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10—Effective September 29, 1933, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 107)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Corsicana (heavy) (June 17, 1933)*	.80
Other fields (See gravity table)	

Note—In East Texas, effective September 29, 1933, by Texas Co., Sanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., Empire Oil & Refining Co., and Atlas Pipe Line Co. posted 60 cents per barrel in East Texas, but on November 3 resumed its posted price of $1 per barrel, making it retroactive to October 22.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$.70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.76
Pecos County, Yates shallow Pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties*. See gravity table	

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers.

(See gravity table)	
Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light (See gravity table)	
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island (See Gulf Coast gravity table)	
Conroe (See Conroe gravity table)	
Bosco, La. (Oct. 15, 1934)§	$1.02

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 2 by Magnolia Petroleum Co., and November 16 by Stanolind Crude Oil Purchasing Co.

*Gretat posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland (Liberty County) posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by

(Continued on Page 107)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

February 19, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases running between 4,000 and 10,000 gallons a month, or 4 cents a gallon off retail prices for purchase in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Denver, Colo.	18.0	20 0	5.0	13 6
Pueblo	17.0	19.0	5.0	13.0
Grand Junction	18 5	20.5	5 0	15 0
Casper, Wyo.	18.0	20.0	5.0	11.5
Cheyenne	18.0	20.0	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	22 0	24 0	6 0	16.5
Helena	23.0	25.0	6.0	17.5
Great Falls	21 5	23.5	6.0	17.5
Salt Lake, Utah	21.0	23 0	5.0	16 0
Boise, Idaho	22.5	24.5	6.0	18.0
Twin Falls	22.5	24.5	6.0	18.0
Albu'que, N. M.	18.0	20.0	*6.5	13.0

*One-half cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Chicago	14.2	16 2	4 0	8.0
Decatur, Ill.	14 2	16 2	4 0	9.4
E. St. Louis	13.9	15 9	4.0	9.1
Joliet	14.2	15.8	4.0	9.5
Peoria	14.2	14 2	4.0	9.4
Quincy	14.1	16 1	4.0	9.3
Davenport, Ia.	14.2	16.2	4.0	9.4
Des Moines	14 1	16.1	4.0	9.3
Mason City	14 4	16.4	4.0	9.6
Sioux City	14 2	16.3	4.0	9.5
Duluth, Minn.	15 0	17.0	4.0	10.2
Mankato	14.7	16.7	4.0	9.9
Minneapolis	14.7	16.7	4.0	9.9
LaCrosse, Wis.	15.7	17.7	4.0	9.9
Green Bay	15 9	17.9	5.0	10.1
Milwaukee	15 8	17 8	5.0	9.7
Madison	16.0	18 0	5.0	9.9
Detroit, Mich.	15 0	17 0	4 0	9.0
Grand Rapids	14 9	16.9	4.0	10.8
Saginaw	15 2	17.2	4.0	11.1
Evansville, Ind.	16 0	17 8	5.0	10.0
Indianapolis	16 1	18.1	5.0	10.1
South Bend	16.4	18.4	5 0	10.4
Fargo, N. Dak.	16 7	17 7	4 0	10 9
Huron, S. Dak.	16.2	18 2	5.0	10.4
Sioux Falls	15.6	17 6	5.0	9.8
Kans. C., Mo.*	13.6	15.6	4.0	7.5
Springfield	13 3	14 5	4.0	7.0
St. Louis	13.9	15 9	3.5	7.5
St. Joseph*	13.6	15 6	4 0	8.8
Wichita, Kans.	13.2	15.2	4 0	6.0
Bartlesville, Ok.	16.8	18.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

Discounts to dealers: Undivided accounts, 3½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accounts one-half cent less than undivided. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Naphtha

	Tank wagon*
Oleum spirits	16.7
V.M.&P. naphtha	18.0
Cleaners' naphtha	18.0
Stanisol	18.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago, January 5, 1935. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Stanolex Furnace Oil in Chicago

Effective Feb. 16, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 80 gallons, 8½ cents; 80-149 gallons, 7½ cents; 150 gallons and more, 7 cents. No. 1 (36-40 lt. stw. zero), less than 100 gallons, 8½ cents; 100-149 gallons, 7½ cents; 150 gallons or more, 7 cents; No. 2 (30-34, stw. zero), less than 150 gallons, 8 cents; No. 3 (22-26, zero), less than 150 gallons, 7 cents; No. 4 (12-16 zero), less than 400 gallons, 7 cents; viscosity of No. 4, 35 at 100° F.; No. 5, less than 400 gallons, 5½ cents. For deliveries of more than stated quantities of Nos. 2, 3, 4 and 5, deduct 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Atlanta, Ga.	19.0	21.0	7.0	12.0
Augusta	19.0	21.0	7.0	15.0
Macon	19.0	21.0	7.0	15.0
Savannah	17.5	19.5	7.0	14.0
Birm'ham, Ala.	19.5	21.5	8.0	12.0
Mobile	18.5	20.5	8.0	11.0
Montgomery	20.5	22.5	8.0	15 5
Jackson, Miss.	18.5	20.5	7.0	13.0
Vicksburg	18.0	19.5	7.0	14.5
Jack'ville, Fla.	18.5	20.5	8.0	11.5
Miami	18.5	20.5	8.0	13.5
Pensacola	19.0	21.0	8.0	13.5
Tampa	18.5	20.5	8.0	12.5
Lexington, Ky.	17.0	19.0	6.0	11.5
Covington	14.5	15.5	6.0	12.5
Louisville	16 5	18 0	6 0	12.0
Paducah	16.5	18 5	6 0	11.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 3 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Dallas, Tex.	13 0	15.0	5.0	7.0
Fort Worth	13.0	15.0	5.0	7.0
Houston	14.0	16.0	5.0	7.0
San Antonio	14.0	16.0	5.0	7.0
El Paso	16.0	18.0	5.0	10.0
Muskogee, Ok.	16.0	18 0	5.0	7.5
Okla. City	16.0	18.0	5.0	7.5
Tulsa	16.0	18.0	5.0	7.5
Ft. Smith, Ark.	14.1	16.5	5.0	9.0
Little Rock	16.6	19.0	7.5	9.0
Texarkana	14.0	16.0	5 0	7.0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Atl'tic City, N.J.	13.4	16 9	4 0	9.0
Newark	12.7	16.2	4 0	8.5
Annapolis, Md.	14.5	18.0	5.0	10.0
Baltimore	14.0	17.5	5 0	8.5
Cumberland	15.0	18.5	5.0	12.7
Wash'g'n, D. C.	12.0	15 5	3.0	11.5
Danville, Va.	16.5	20.0	6.0	12.9
Norfolk	15.0	18.5	6.0	11.2
Petersburg	15.5	19.0	6.0	11.4
Richmond	15.5	19.0	6.0	11.7
Roanoke	16 5	20.0	6.0	12.9
Charls'n, W.Va.	15.0	18.5	5.0	12.6
Parkersburg	14.5	18.0	5.0	11.2
Wheeling	15.0	18.5	5.0	12.2
Charlotte, N. C.	17.4	20.9	7 0	13.5
Hickory	17 5	21.0	7.0	13.7
Mt. Airy	17 5	21 0	7.0	13.8
Raleigh	17.2	20.7	7 0	13.3
Salisbury	17 5	21 0	7 0	13.6
Charleston, S.C.	15.2	18.7	7.0	11.3
Columbia	16.5	19.5	7.0	13.2
Spartanburg	17.4	20.9	7.0	13.5

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Omaha	15.6	17 6	5 0	10.0
McCook	16.3	18 3	5.0	10 7
Norfolk	16.0	18.0	5 0	10.4
North Platte	16.4	18.4	5 0	10 0
Scottsbluff	17.1	19.1	5.0	11 5

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Corwn, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
N. Orleans, La.	14.5	17.0	‡5.0	10.5
Baton Rouge	15.2	18.7	†7.0	12.0
Alexandria	16.1	19.6	†*8.0	10.0
Lafayette	16.3	19.8	‡*8.0	12.0
Lake Charles	16.2	19.7	†*8.0	12.0
Shreveport	11.5	14.0	†7.0	12.0
Knoxville, Tenn.	18.7	22.2	8.0	13.5
Memphis	17.0	20.5	8.0	10.5
Chattanooga	18.0	21 0	8.0	11.0
Nashville	18.0	21 5	8.0	13.0
Bristol	17.0	20.5	8.0	14.0

*Includes city tax of 1 cent.

‡Includes 2-cent parish tax. †Includes 1-cent parish tax.

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank wagon†	Posted retail	Incl'ds tax of	Kero- tank wagon
San Francisco	16.5	18.5	4.0	13.5
Los Angeles	15.5	17.5	4.0	13.5
Fresno, Calif.	17.0	19.0	4.0	14.0
Proenix, Ariz.	20.0	22.0	6.0	‡16.0
Reno, Nev.	19.0	21.0	6.0	15.5
Portland, Ore.	19.0	21.0	6.0	13.5
Seattle, Wash.	19.0	21.0	6.0	13.5
Tacoma	19.0	21.0	6.0	13.5
Spokane	22.0	24.0	6.0	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Phil'delphia, Pa.	14.0	16.0	4.0	9.0
Pittsburgh	15.0	17.0	4.0	10.0
Allentown	14.5	16.5	4.0	10.0
Erie	12.5	12 5	4.0	9.0
Scranton	15.0	17.0	4.0	10.0
Altoona	15.0	17.0	4.0	10.0
Dover, Del.	14.5	16.5	4.0	10.0
Wilmington	14.5	16.5	4.0	9.0
Springf'd, Mass.	13 5	17 0	4.0	8.5
Worcester	13.5	17.0	4.0	9 0
Hartford, Conn.	12 5	16 0	3 0	8.0
New Haven	12 5	16.0	3.0	8 5
Providence, R.I.	12.0	14.0	3.0	8.5

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Hamilton, Ont.	†22.0	25.0	6.0	17.5
Toronto, Ont.	†22.0	25.0	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	29.0	32.0	6.0	21.5
Saskatoon, Sask.	31.8	34.8	6.0	24.3
Edmonton, Alta.	31 2	34.2	6.0	23.7
Calgary, Alta.	28.5	31.5	6.0	21.0
Vancouver, B.C.	27.0	30.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. John, N.B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30.0	8.0	19.5

*Imperial gallon used in Canada. †Governed by service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents per gallon off service station price (except Toronto and Hamilton cities which are—open dealers 2½ cents off service station price) 1 cent additional to 100 per cent accounts.

New York and New England

SOCONY-VACUUM CO., INC.

	Gasoline: Posted dealer	Service station	Incl'ds tax of	Kero- tank wagon
Albany, N. Y.	13.0	16 5	4.0	9.0
Met. New York	11.75	14.5	4.0	8.75
Br'klyn, Queens	11.5	14.0	4.0	8.75
Buffalo	12.5	15.0	4.0	8.0
Rochester	12.5	15 0	4.0	8.5
Syracuse	13.5	17 0	4.0	8.75
Boston, Mass.	13.5	16.0	4 0	8.5
Portland, Me.	14.5	18 0	5.0	8.75
Manch't'r, N.H.	14.5	18 0	5.0	9.0
Burlington, Vt.	16.0	19.5	5.0	9.0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero- tank wagon
Ohio points	15.5	17.5	5.0	*13.5

*Includes state tax of 1 cent, effective July 22.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Socony-Vacuum Oil Co. Inc., February 16, advanced tank wagon and station gasoline 3 cents in Buffalo; advanced tank wagon and station gasoline 2.5 cents in Rochester. February 18, advanced tank wagon kerosene one-half cent, and reduced tank wagon and station gasoline one-half cent in Albany; reduced tank wagon and station gasoline one-half cent in Boston, Portland, Manchester and Burlington; reduced tank wagon gasoline three-quarters cent and station gasoline one-cent in Metropolitan New York; reduced tank wagon and station gasoline 1 cent and advanced tank wagon kerosene one-quarter cent in Brooklyn and Queens.

Standard Oil Co. of Indiana, February 9, reduced station gasoline 2 cents in Peoria. February 11, reduced station gasoline one-half cent in Joliet. February 13, advanced tank wagon gasoline .3 cent in Milwaukee and Madison. February 16, advanced station gasoline .3 cent in Milwaukee and Madison. February 9, reduced tank wagon kerosene .6 cent in Decatur and Peoria; .2 cent in East St. Louis, Souix City and Duluth; .5 cent in Joliet, Quincy, Mason City, Minneapolis and Fargo; .7 cent in Davenport; .8 cent in Des Moines; .4 cent in Mankato; .9 cent in LaCrosse and Huron; .1 cent in Green Bay, Indianapolis and South Bend; and 1.1 cents in Souix Falls. February 9, advanced tank wagon kerosene .6 cent in Grand Rapids and Saginaw.

Standard Oil Co. of Louisiana, February 9, reduced station gasoline one-half cent in New Orleans; reduced tank wagon and station gasoline 1 cent in Shreveport.

Magnolia Petroleum Co., February 18, advanced tank wagon and station gasoline 1 cent in Dallas, Fort Worth and Houston.

Socony-Vacuum Oil Co., Inc., February 19, reduced tank wagon gasoline 1 cent and station gasoline 2 cents in Metropolitan New York and Brooklyn and Queens.

HIGH AUTO PRODUCTION

Refiners and marketers are encouraged by the report of the automobile industry that the latter was able to show substantial increases in sales during 1934.

Retail sales of new motor vehicles in the United States during 1934 totaled 2,292,443 units, according to R. L. Polk & Co. This is a gain of 552,810 units, or 31.77 per cent over the 1,739,633 units sold in 1933, and compares with sales of 1,276,812 in 1932 and 2,222,025 in 1931.

There were 1,888,557 new passenger cars sold in 1934, a gain of 26.42 per cent over the 1,493,794 passenger cars sold in 1933.

OSAGE SALE MARCH 27

Oil and gas leases on approximately 14,000 acres of restricted Osage Indian lands will be offered for sale March 27.

NEWS FOR SALES DEPARTMENTS

R. T. Haslam Appointed to Head of Standard Sales

R. T. Haslam, who for several years has been connected with the development and sales operations of the company, has been appointed general manager of domestic sales of the Standard Oil Co. of

R. T. HASLAM

New Jersey. In his new work Mr. Haslam will supervise sales of the Esso units which includes the domestic marketing operations of the Standard Oil Co. of New Jersey, Standard of Pennsylvania, Standard of Louisiana and Colonial Beacon Oil Co. His appointment follows the resignation of R. G. Stewart as vice president in charge of sales last week to engage in consulting work.

Mr. Haslam's first connection with the oil business was in research and development work for the New Jersey Standard. He graduated from Massachusetts Institute of Technology in 1911 and remained with the school for a short time as instructor. He was with the National Carbon Co. eight years, serving in various capacities, including research chemist, production manager and assistant superintendent. He returned to M.I.T. in 1920 as professor of chemical engineering and later was in charge of the research laboratory of applied chemistry.

He joined the New Jersey organization in 1927 as manager of development work for the Standard Oil Development Co. He became senior vice president and general manager in 1932. During this period he had an important part in the development of new processes for refining, including hydrogenation. Over the past three years he has also devoted considerable time to sales work in the introduction of new motor fuels and lubricants.

EXPORTS FOR DECEMBER

The following statistics of exports of petroleum and its products for the month of December, 1934, are furnished by the United States Department of Commerce:

Exports—	Dec. 1933 bbls.	Dec. 1934 bbls.
Petroleum	2,635,950	2,432,401
Natural gasoline	68,170	148,787
Gasoline	1,462,052	1,429,499
Illuminating oil	856	886
Gas oil and fuel oil	1,428,944	1,076,308
Residual fuel oil	855,499	1,694,367
Lubricating oil	714,856	479,840
Greases (lbs.)	7,759,104	7,292,201
Paraffin wax (lbs.)	19,636,389	16,576,195
Asphalt (tons)	19,917	15,091
Coke (tons)	4,128	14,260

TAX INCOME INCREASES

Michigan automobile users paid $1,547,163 more in gasoline taxes during 1934 than in 1933. In 1933 total gasoline tax collections were $20,460,256.53 compared with $21,913,193.04 in 1934, an increase of about 7½ per cent.

The increase will aid the state government which two years ago started returning about $6,000,000 annually from this fund to the 83 counties in addition to all of the weight tax collections aggregating about as much as the total gross income from the gasoline tax. Previously both funds were available for state highway construction and maintenance.

A measure is now before the legislature which would abolish all refunds of gasoline tax. This would not disturb the present law under which taxes on aviation gasoline are allocated to the Michigan State Board of Aeronautics.

SOLVENT IN NEW GASOLINE

The Pocahontas Oil Co., large jobbing concern operating in the Cleveland, Ohio, territory, today introduced a new gasoline containing a solvent. The new solvent is controlled by the Lubri-Zol Corp. of this city which owns the patents originally issued to Dr. Carl F. Prutton of the Case School of Applied Sciences. Doctor Prutton's work covered the blending of halogenated hydrocarbons in lubricating oils. The solvent is a new application of this development.

The principal claim made for the new motor fuel is the property of minimizing carbon troubles in engines. The Pocahontas company was one of the first to offer gas containing oil for upper cylinder lubrication. The new gasoline replaced that fuel. The company is affiliated with the Pure Oil Co.

Modern Service Station Adopts Air Conditioning

One of the first air-conditioned service stations in America was recently opened in St. Louis by the Lubrite division of the Socony-Vacuum Oil Co., Inc. The modern brick building also houses the local division offices, and is acoustically treated as well as scientifically lighted.

The building has a total floor space of 40,000 square feet. The very latest developments have been adopted for the safety, comfort and efficiency of the staff and customers.

The station is located on one of the city's most important thoroughfares. Pumps of an inconspicuous type that blend with the surroundings and register fractions of gallons are used. Air hose serve the cars without it being necessary to move from the pumps. This is made possible by the fact that the "islands" contain the hose reels to which the air is piped from the compressor. Equipment is complete to give every form of service to motorists.

One of the interesting features of the Mobilgas station is the fact that the various service facilities are concealed from the boulevard by a brick wall with a series of graceful arches as entrances. Behind this wall are the service rooms equipped for lubrication, washing, battery and tire service and sundry other operations.

NEW LUBRICANT PLANT

TORONTO, Ontario, Feb. 16.—The Kendall Refining Co. of Bradford, Pa., has leased floor space at 35 Fraser Avenue for a plant for the blending and canning of motor oils. E. J. Kenney is Canadian representative.

ARTHUR C. STEWART » » »

ARTHUR C. STEWART, recently appointed division sales manager of the southern division of the Union Oil Company of California, is a graduate of Leland Stanford University and became an employe of the Union Oil Company in 1928. His first duties were in the Salesfax division of the sales department. He subsequently worked in the San Francisco sales office and was the company's agent in San Jose. He later entered the fuel oil department and in January, 1930, joined the export sales department. In June of that year he was one of the Union Oil Company representatives who made a tour of the Orient to determine the extent of the market for petroleum products in the Far East.

June 19, 1931, Mr. Stewart was appointed manager of specialty sales and handed four specialties and told to see what he could do with them. His successful administration of this commitment has been a source of gratification to sales department executives. The four original specialties have been increased to thirteen primary specialties. In his new position as sales manager of the southern division, Mr. Stewart will be in direct charge of all sales activities, particularly in the stimulation of sales efforts and increased volume of business.

COMMITTEEMEN NAMED

C. E. Arnott, chairman of the Division of Marketing of the American Petroleum Institute, has appointed C. H. Ehlers, Atlantic Refining Co., and W. M. Schmitt, Sun Oil Co., both of Philadelphia, to membership on the committee on marketing equipment of the division. Mr. Ehlers succeeds W. A. Topercer, and Mr. Schmitt fills the vacancy left by the death of Homer I. Morris.

Alcohol Question Debated at Association Meeting

Featuring the annual convention of the South Dakota Independent Oil Men's Association at Huron, February 7 and 8, was a debate on power alcohol and farm relief between Prof. Leo M. Christensen of Iowa State College, Ames, Iowa, and Prof. G. G. Brown, of the University of Michigan, Ann Arbor, Mich. Great interest was aroused, with the large audience apparently favoring the stand of Doctor Brown, although no official decision was rendered. Later the two speakers appeared in a similar debate before the state legislature in session at Pierre.

J. H. Cumbow, Cumbow-Lanning Oil Co., Sioux Falls, was elected president; John Ries, Codington County Oil Co., vice president, and F. H. Burhler, re-elected secretary for the sixteenth consecutive year.

ADMIRAL BYRD'S TRIP

Upon the near completion of Admiral Byrd's south pole trip it is revealed that 20,350 gallons of gasoline and 1,300 gallons of lubricants have been consumed by the 36 gasoline engines ranging in size from 1,100 pounds to 32 pounds each. Included in the group were tri-motor planes, tractors and snowmobiles, each of which had to operate under conditions more severe than could be found any place where ordinary motors are used.

Conditions in the air and on the ice have made aircraft and tractor operation not only hazardous but extremely difficult. The conditions under which the flights have been made necessitated carrying exceptionally heavy loads and on many occasions overloads. The motors were continuously overworked and the delicate mechanisms subjected to rapid and wide variations in temperature. On the ground the tractors had even greater difficulties.

U. S. LARGEST SUPPLIER

OTTAWA, Canada, Feb. 16.—Official figures show that imports of petroleum, asphalt and their products into Canada in December were valued at $1,880,211 compared with a November valuation of $4,461,153. The chief sources of supply, with percentages, were: United States, 90.6; Peru, 6.5; Venezuela, 2. Crude petroleum imports in December totaled 47,613,461 gallons, the chief sources being: United States, 39,581,962; Peru, 4,184,324; Venezuela, 3,847,175.

Exports of petroleum and its products from Canada in December were valued at $208,932 compared with $32,144 in November.

FINAL FUEL AWARDS

WASHINGTON, D. C., Feb. 16.—Final award of contracts totaling $2,832,571 for approximately 3,000,000 bbls. of fuel oil for the Navy was announced this week by the Navy Department. Contract awards included: Union Oil of California, $1,982,661 for 2,397,850 bbls.; Associated Oil Co. of California, $421,410 for 482,000 bbls.; and Rio Grande Oil Co., $137,000 for 200,000 bbls.

NEWS FOR PETROLEUM REFINERS

Great Lakes Pipe Line Adds New Booster Unit

Great Lakes Pipe Line Co. will install a Rannett type booster unit midway between Ponca City and Barnsdall, at a station located in Section 22, Township 25n, Range 6e, approximately 5 miles northeast of Fairfax.

The Rannett unit consists of a centrifugal pump to which is connected a 400 horsepower electric motor. The gasoline stream passes around the motor case and acts as a cooling agent to materially increase the efficiency of the motor.

The addition of the unit will greatly increase the flexibility of the 54-mile line. Representatives of the company state that the present capacity out of Ponca City has never provided for any flexibility and that adherence to refinery allocations and reduced gasoline stocks make flexibility imperative for the protection of gasoline pipe line shippers.

Electric service will be furnished by Oklahoma Power & Water Co. of Sand Springs.

Gasoline Allocations for March Up to Meet Demand

The March motor fuel production in the United States has been allocated among the eight districts to provide for a total output of 32,920,000 bbls. and an increase in stocks due to season differences of demand amounting to 2,940,000 bbls. The individual allotments have been made as follows:

MARCH GASOLINE ALLOCATIONS

District—	Barrels: Allocation to meet current demand	Barrels: Allocation for seasonal stock increase
East Coast	5,331,000	603,000
Appalachian	1,517,000	140,000
Ind., Ill., Ky.	5,015,000	801,000
Okla., Kans., Mo.	4,475,000	300,000
Texas:		
Inland Texas	1,899,000	114,000
Texas Gulf Coast	6,596,000	718,000
East Texas	618,000	none
Louisiana-Arkansas:		
La. Gulf Coast including Ala.	1,170,000	41,000
N. La.-Ark. including Miss.	710,000	20,000
Rocky Mountain	676,000	203,000
California	4,913,000	none
	32,920,000	2,940,000
Total United States		35,860,000 bbls.

WAYCO ADDS PRODUCING UNITS

Merger of the Wayco Refining Co., of Detroit and Toledo, and certain of the A. J. Youmans interests in producing oil and gas properties in Central Michigan was announced by John N. Stalker, president of the Wayco company, and Mr. Youmans. The new combination will be continued under the name of the Wayco Refining Co. of Michigan.

UNITED SIGNS CONTRACT

The United Refining Co. of Warren, Pa., has signed a license contract with Universal Oil Products Co. Remodeling of a unit at the United plant has begun to adapt it for Dubbs full flashing operation. This unit has been used for reforming straightrun gasoline and naphtha.

A flash chamber, bubble tower and hot oil pump are to be added, which will make possible the cracking of gas oil as well as reforming. Cracking capacity will be about 400 bbls. a day.

The United refinery has a crude capacity of about 3,000 bbls. a day and operates exclusively on Pennsylvania crude, producing Emblem motor oils and Keystone gasoline.

Gasoline Inventories Planned to Reach Total of 65,110,000 Barrels March 31

The National Gasoline Inventory Committee, after carrying on a detailed survey covering the subject over the past six months, has reached the determination that the industry should have on hand as of March 31, 1935, in order that it may find itself in a position to economically supply the demand of the next high consuming season, the following gasoline inventories.

In submitting this report the committee desires to recommend to you the continuation of the National Gasoline Inventory Committee in order that it may continue its studies leading to a final determination of seasonal requirements monthly throughout the year and that it may be in a position to hear requests for revisions of the figures indicated as they become necessary through changing conditions within the industry and so that it may give attention to other related duties as they may come up for consideration.

The committee realizes that it has met with some delay in completing its report and that the date upon which the inventories indicated are required is not very far distant. It wishes, however, to make clear that as any particular portion of the report was completed, and proved to be of interest to allocators and to those whose duty it was to set the production of gasoline within limits that would provide not only sufficient gasoline to meet current requirements but to build up necessary inventories, it passed that information on to the interested agencies and in this connection wishes to state that the statistics of the industry clearly show that the indicated inventory requirements will be possible of accomplishment by March 31, as is illustrated by the following tabulation of figures of actual inventories of gasoline as of recent dates, with estimates of the effect upon inventories of the gasoline production allowables for those months for which actual figures are not available.

	Total inventories of gasoline
September 30, 1934 (B. of M.)	53,073,000
October 31, 1934 (B. of M.)	49,975,000
November 30, 1934 (B. of M.)	48,759,000
December 31, 1934 (B. of M.)	52,935,000
January 31, 1935 (estimated)	58,330,000
February 28, 1935 (estimated)	62,900,000
March 31, 1935 (required)	65,110,000

A. E. PEW, Chairman.
C. M. BOGGS,
H. F. GLAIR,
H. A. LOGAN,
J. E. SHATFORD,
GEORGE H. TABER, Jr.,
FRED VAN COVERN,
G. H. VAN SENDEN.

ESTIMATED GASOLINE STOCKS

District—	Total fixed unavailable	Shipping stocks	Seasonal requirements	Total required inventories
1. East Coast	10,783,000	3,166,000	4,951,000	18,900,000
2. Appalachian	1,319,000	415,000	1,472,000	3,206,000
3. Indiana-Illinois-Kentucky	4,649,000	1,812,000	4,608,000	11,069,000
4. Oklahoma-Kansas-Missouri	3,959,000	965,000	2,250,000	7,204,000
5. Texas:				
(a) Inland Texas	790,000	481,000	246,000	1,517,000
(b) Texas Gulf Coast	3,072,000	3,183,000	2,667,000	8,922,000
(c) East Texas	150,000	115,000	.....	265,000
6. Louisiana-Arkansas:				
(a) Louisiana Gulf Coast including Alabama	885,000	771,000	621,000	2,277,000
(b) North Louisiana-Arkansas including Mississippi	100,000	150,000	160,000	410,000
7. Rocky Mountain	447,000	211,000	715,000	1,373,000
8. California	5,070,000	2,176,000	2,721,000	9,967,000
Total United States	31,254,000	13,445,000	20,411,000	65,110,000

Decisions Given on Gasoline Allocation Appeals

The Refinery Board of Review, which held its regular monthly session on Wednesday, February 6, 1935, in Washington, D. C., for the purpose of reviewing appeals from gasoline production allocations fixed for the month of February, reported the following appeals and decisions rendered, none of which decisions granting increases are to become effective unless and until approved by the administrator of the code for the petroleum industry.

The board also announced that its next monthly session will be held in Washington, D. C., on Wednesday, March 6, 1935, which is the final date that appeals from quotas fixed for March may be perfected and presented before the board for decision at that session.

Appellant—	District No.	Increase requested (bbls.)	Increases granted—for Current demand	Increases granted—for Stock increase
Mid-Continent Petroleum Corp.	4	.....	.....	Withdrawn
Sinclair Refining Co.	3	38,477	12,000	26,477
Sinclair Refining Co.	5-B	51,000	.....	51,000
Sinclair Refining Co.	7	7,990	.....	.....
Anderson-Prichard Refining Corp.	4	6,956	4,000	2,956
Phillips Petroleum Co.	4	42,268	.....	.....
Phillips Petroleum Co.	5-A	118,530	.....	.....
Magnolia Petroleum Co.	5-B	309,887	.....	.....
Shell Petroleum Corp.	3	93,128	.....	93,128
Pan-American Refining Corp.	5-B	65,780	.....	65,780
Barber Asphalt Co.	1	6,000	6,000	.....
Continental Oil Co.	7	12,648	.....	.....
Standard Oil Co. of New Jersey	1	219,000	.....	.....
Socony-Vacuum Oil Co.	1	175,000	170,000	5,000
Deep Rock Oil Corp.	4	.....	.....	Withdrawn
Texas Co.	3	80,563	19,250	61,313
Yale Oil Corp.	7	4,005	3,505	500
Humble Oil & Refining Co.	5-B	213,378	.....	.....
District Allocating Agency	7	48,018	.....	.....
Col-Tex Refining Co.	5-A	14,557	4,000	10,557
Total		1,566,177	218,755	316,711

New Refining Company Formed in Michigan

Organization of the Inland Refineries, Inc., to build and operate a new 750 to 1,000-bbl. plant at Drayton Plains, Mich., was announced this week.

The company has an authorized capital of 88,000 shares of Class A stock with a par value of $1 a share and a similar issue of 88,000 shares of no-par value common with 60,360 shares of both issues to be sold to erect the plant and provide sufficient working capital to start operations.

A pipe still refinery of the latest type will be erected on a 13-acre site with frontage on the Dixie Highway and adjoining the Grand Trunk Western Railway.

E. G. Guy, of Mount Pleasant, who is now completing the new McClanahan Refining Co. plant at St. Louis, Mich., will design and supervise construction of the Inland plant. Officers of the new company are: President, Carl L. Skidmore; vice president and treasurer, Paul Martin, and secretary, Benjamin F. Hall. Mr. Skidmore and Mr. Martin have been active in distribution of oil in Michigan for a number of years.

A.P.I. Accident Prevention Committee Is Appointed

R. E. Haylett, chairman of the central committee on refinery technology of the American Petroleum Institute, has appointed the following to membership on the committee on accident prevention in refineries:

C. W. Smith, Standard Oil Co. (Indiana), chairman; H. N. Blakeslee, American Petroleum Institute, secretary; C. P. Anderson, Richfield Oil Co.; J. C. Bernd, Sinclair Refining Co.; R. W. Black, Standard Oil Co. of New Jersey; J. C. Boylan, Continental Oil Co.; J. H. Brown, Tide Water Oil Co.; Glenn Byers, Shell Petroleum Corp.; C. W. Coleman, Gulf Refining Co.; R. E. Donovan, Standard Oil Co. of California; J. H. Herbert, Standard Oil Co. (Ohio); D. B. Hiatt, Texas Pacific Coal & Oil Co.; L. F. Knox, General Petroleum Corp.; W. F. Lowe, Natural Gasoline Association of America; S. H. McKenty, Atlantic Refining Co.; C. J. Nobmann, Shell Oil Co.; A. A. Odell, Barnsdall Oil Co.; G. F. Prussing, Union Oil Co. of California; W. P. Reymond, Jr., Standard Oil Co. of Louisiana; C. L. Swim, Skelly Oil Co.; and A. A. Nichoson, Texas Co.

FENSKE SPEAKS AT N.P.A.

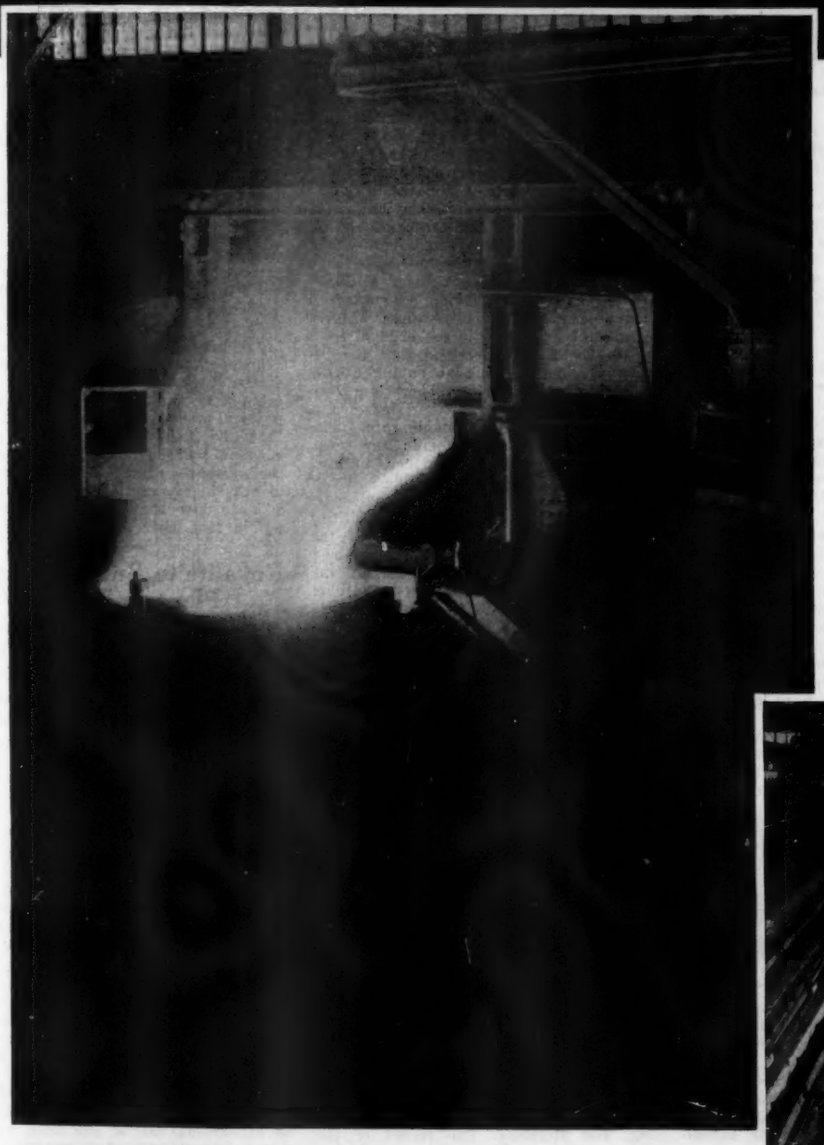
Arrangements have been made for a meeting of the Department of Standards and Tests of the National Petroleum Association at the Oil City Y.M.C.A., at 6:30 p.m., Friday, February 22. This is to be a dinner meeting at which Dr. Fenske, of the Pennsylvania State College, will be the principal speaker. A subject will be chosen which will be of interest to everyone. Following Doctor Fenske's talk there will be a period allowed for discussion.

BEGINS OPERATIONS

The McClanahan Oil Refining Co. plans to start operating a new 1,500-bbl. plant in St. Louis, Mich., about March 1, it was announced by Walter L. McClanahan, president.

A mile of 3-inch line to connect the new plant with a 10-mile line carrying crude from the Porter Pool to the Midwest refinery in St. Louis was to be laid this week to supply the new plant.

TIMKEN QUALITY STEELS
for longer Sucker Rod life



RECENT developments by Timken metallurgists have made important sucker rod economies available to every oil field operator. As a result of extensive research, sucker rod steels have been developed which possess a combination of mechanical properties and corrosion resistance necessary for maximum endurance and life under various conditions of well pumping.

Timken Sucker Rod Steels are manufactured under the same scientific and rigid system of quality control as Timken High Temperature Refinery Tubes, assuring consistently high and uniform physical standards.

It will pay you to see that your new sucker rods are made of Timken Quality Steels. Addresses of sucker rod manufacturers using Timken Steels will be furnished on request

GOOD WILL BASED ON GOOD STEEL

THE TIMKEN STEEL & TUBE COMPANY, CANTON, OHIO

District Offices or Representation in the following cities:

Detroit Chicago New York Los Angeles Boston Philadelphia Houston
Buffalo Rochester Syracuse Tulsa Cleveland Erie Dallas Kansas City

World's Largest Producer of Electric Furnace Steel

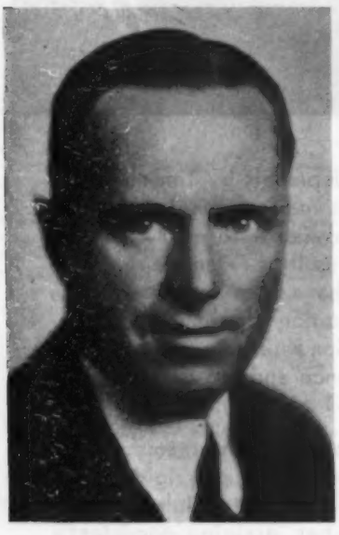
TIMKEN ALLOY STEELS

ELECTRIC FURNACE AND OPEN HEARTH • ALL STANDARD AND SPECIAL ANALYSES

NATURAL GASOLINE MANUFACTURE

C.N.G.A. Reports Steady Increase in Membership

Improved economic conditions in the California natural gasoline and liquefied petroleum gas industries and the renewed interest by gas and gasoline men in prob-



H. L. EGGLESTON

lems affecting their activities are the main reasons, according to H. L. Eggleston, president of the California Natural Gasoline Association, for the phenomenal growth this organization has experienced in the last six months, both in membership and attendance at the regular monthly meetings.

Efficient work by committee chairmen in co-ordinating and publishing information important to the industry, together with the long-range scheduling of monthly programs of educational, as well as technical value, says Eggleston, have served to reawaken an enthusiastic interest which has raised the active membership well on toward 350, with an attendance at monthly meetings gradually approaching the 200 mark.

The annual fall meeting held at Los Angeles Biltmore Hotel on November 1 exceeded all forecasts of attendance and taxed the capacity of the auditorium. Officers of the organization fear that at the present rate the accommodations afforded by the Richfield Cafe for the regular monthly meetings will soon be too small. The C.N.G.A. was founded in the fall of 1925 by a handful of men from various oil companies for the purpose of discussing problems of natural gasoline manufacture.

C.N.G.A. Bulletins and Proceedings Available

Through the active co-operation of nine Pacific Coast natural gasoline manufacturers, the California Natural Gasoline Association has been able to publish Bulletin TS-311 on the Analysis of Natural Gasoline by Low Temperature Fractionation, and Bulletin TS-321, on the Analysis of Natural Gas. The material contained in these 15-page publications was arranged by a group which studied the problems of gasoline analysis under the joint direction of C. C. Moore, Jr., of the Union Oil Co., and R. R. Crippen, of the Texas Co. (Calif.) and a second group which attacked the question of low temperature gas analysis under the joint direction of Moore and H. J. Multer, of the Union Oil Co.

Both bulletins give complete information covering specifications for fractionating columns, kettles, heating elements, condenser baths, manifolds, manometers, receiving bottles and thermocouples. Data are also given on annealing temperatures, silvering of glass parts, and the degree of evacuation necessary for the column jackets.

Operating instructions which are outlined include the preparation of the apparatus, introduction of the sample, procedure of analysis, distillation rates, and the calculation and reporting of results. Each bulletin, in addition to eight illustrations, contains a table of the physical constants of the principal natural gas and natural gasoline hydrocarbons. Copies of either publication are available at $1 each, postpaid, through the C.N.G.A. secretary, 1217 Associated Realty Bldg., Los Angeles.

The association has just published the complete proceedings of its annual fall meeting, held November 1, 1934. Reviewing the progress of its technical activities, the report of the morning session contains papers by the chairmen of the committees on Gasoline Testing, Gas Deviation, Analytical Fractionation, Absorption Oil Testing, Charcoal Testing, and Metering. The record of the afternoon session contains a paper by Drs. W. N. Lacey and B. H. Sage, of the California Institute of Technology, on "The Properties of Propane;" a discussion of the "Practical Aspects of the Paper by Drs. Lacey and Sage," by H. N. Wade, consulting engineer; "A New Total Heat Chart for Propane" by E. G. Ragatz of the Union Oil Co.; and a closing discussion by E. R. Cox, of the Texas Co. (Calif.) on "The Physical Constants of Propane."

Printed copies of these proceedings, together with a complete stenotyped transcription of the floor discussion, are available to nonmembers for 50 cents postpaid, through the C.N.G.A. Secretary, 1217 Associated Realty Building, Los Angeles.

Proposed State Tax on Gas Will Affect Oklahoma Natural Gasoline Industry

The Oklahoma Legislature in applying an additional tax on the state production of oil and gas has reached a position where the original proposal of a fixed minimum charge has been abandoned. That body is now turning its attention to proportional taxation, with the object settling on a most satisfactory rate from the standpoint of state income.

As the possibility of a minimum straight tax is now definitely dead, consider in retrospect what effect this basis of taxation would have had on the natural gasoline producers in Oklahoma. During 1934, 196 natural gasoline plants in Oklahoma produced daily 2,247,916 gallons of gasoline. The gas processed averaged 1.19 gallons per thousand cubic feet. An average of .468 cents was paid the producer for the casing head gas to produce one gallon. This price is according to the 15 per cent standard contract, exclusive of residue gas sales. The manufacturing cost per gallon was 3.4 cents. This brings the cost per gallon exclusive of any tax to 3.86 cents per gallon. But the average price during 1934 was 2.6 cents per gallon. These figures show a net loss of more than 1 cent per gallon for Oklahoma natural gasoline manufacturers during 1934.

There are reasons why this industry is willing to operate in the face of a loss. The gas will be produced whether it is processed or not. The equipment is available for processing this gas. The product is a premium and necessary component of motor fuel. Then in operating even at a loss the industry avoids the waste of idle equipment, utilizes a fraction of the casing head gas otherwise wasted, and above all, retains a great amount of labor which would otherwise be added to relief rolls. Plants under common ownership with refineries and marketing units will stay in operation in order to furnish the natural gasoline needed in blending for finished gasoline, and any losses will be absorbed by the company as a whole. Why many of the plants are not moved to other fields where gas may be obtained more cheaply can only be explained by an anticipation on the part of operators for elimination of some of the present burdens. However a great percentage of the plants are owned privately and operated by the owners who are able to maintain a living through personal ownership and operation.

The arguments for operating and closing down are very closely balanced in many cases. To impose a higher tax of any degree will cause some shutdowns. But to have imposed a 3-cent rate would have proved prohibitive to practically all operators. In fact any of the straight minimum tax rates considered would have caused a widespread closing of plants in the state. Compared with the present 3 per cent rate, a half cent straight tax would increase the rate 2,000 per cent, and a 1 mill levy would increase it 400 per cent. Beside this, the straight basis would be discriminating and unfair, giving advantage to manufacturers in fields where natural gasoline content in the gas is high.

It should be understood that the industry is not balking at paying a reasonable tax to the state. There is a very fine discrimination, however, between a reasonable and unreasonable rate. The State of Oklahoma is not in any sense an oil sovereignity. Further, natural gasoline manufacture is flexible and can easily change location. Oklahoma is surrounded by fields offering possibilities for the industry. In some parts of the Texas Panhandle gas may be obtained free of charge for the taking. East Texas is showing a steady increase in natural gasoline operations. Prospects in Kansas are also improving. Oklahoma is extremely subject to the conditions in these regions. It would not take a very large differential between Oklahoma rates and those of Kansas and Oklahoma to cause a general influx of the industry to fields surrounding Oklahoma.

It is readily to be seen then, that taxation of gas in Oklahoma is subject to the laws of diminishing returns. The optimum rate which the industry can stand is not proven, but it certainly is not far above the present one. Drastic legislation will drive the industry from Oklahoma, eliminating the present sizeable income, throwing additonal laborers out of employment and thus defeating the underlying motive for the entire program.

Operators in Panhandle Expect Curtailment Law

Natural gasoline plant operators in the Panhandle Field of Texas are preparing for some sort of forced curtailment program but the nature of the move is not known nor is the effective date even suggested. A majority of them have consistently worked toward a solution of the problem of equitable production among landowners and utilization of the gas by returning the residue to the oil producing sands, delivering it to pipe lines or to carbon black plants, but for more than two years there has been no "meeting of minds" among the landowners, royalty holders, plant operators, politicians and pipe line representatives. Publicity has been given the so-called waste of gas until it has become one of Administrator Ickes' chief talking points in pushing for federal control of the oil business.

Because of this, the attitude has developed that the State of Texas must reveal its strength to cope with such problems. Governor Allred has shown a willingness to go along with other states in a form of agreement for the allocating of oil production and the orderly development of fields but he has also indicated that he will not support a program that would go far beyond curbing physical waste. Guesses have been made that the field's production of natural gasoline will be cut to 50 per cent of the present output within the next six months in expectation of the passage of a state law to curtail gas production within that time.

Royalite to Build Second Plant in Turner Valley

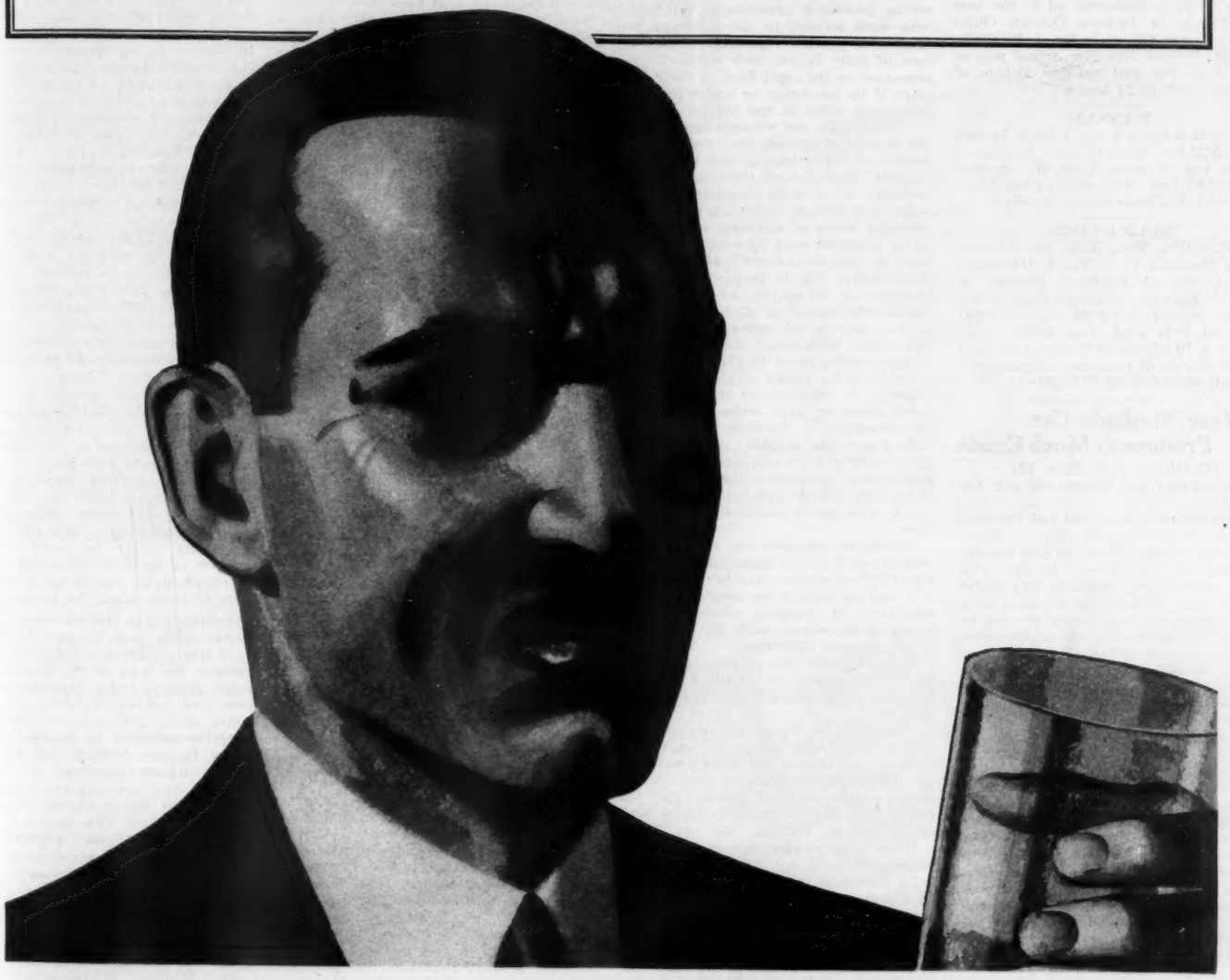
CALGARY, Alberta, Feb. 16.—Announcement has been made by J. H. McLeod, president of Royalite Oil Co. and western production manager of Imperial Oil, Ltd., that the Royalite company will build and operate a second gasoline absorption plant in the Turner Valley Field.

The new plant will probably be located at the north end of Section 33-18-2w5, the old Sterling-Pacific lease. This is about a mile south of Gas & Oil Products, Ltd.'s independent absorption plant on the Mercury lease in Section 4-19-2w5. Mr. McLeod was unable to state the probable cost of the new plant or when construction would be commenced.

The company's decision to build a second gasoline absorption plant in South Turner Valley is believed due to the success attained by the company's original absorption plant in the Central Turner Valley Field. Completed in May, 1933, this plant was enlarged in December of the same year, and now has a capacity of 115,000,000 feet of gas daily, and between 80,000,000 and 90,000,000 feet a day are being processed. Oil & Gas Products, Ltd.'s plant in South Turner Valley, completed in September, 1934, has a capacity of around 80,000,000 feet and in December processed about 50,000,000 feet daily.

It was largely due to the introduction of gasoline absorption plants that the Turner Valley naphtha production passed the 1,000,000-bbl. figure in 1934. A number of the older wells had reached a point where they were no longer profitable to operate on separators, and would have been shut down except for the more satisfactory recovery secured through the absorption plants. It is anticipated that eventually all the Turner Valley gas will be processed by absorption plants.

GUM IS A BITTER PILL for the refiner to swallow!



THERE are a lot of refiners who have been taking gum in gasoline as a necessary evil. But those refiners haven't heard about Du Pont Antioxidants. For if they had, they would know that Du Pont Antioxidants prevent gum. That's one of the reasons why the modern refiner is using antioxidants to get the jump on his competitors. And as a result, he will be in for some real economies.

Other reasons why Du Pont Antioxidants offer the modern refiner the opportunity to produce a superior cracked gasoline are: They make possible a higher yield of gasoline because they minimize acid treatment losses. Slash redistillation costs . . . in some cases eliminate re-runs entirely. Give the maximum preservation of anti-knock properties. Produce a high degree of color stability. And have the low material cost of from ½c to 2½c per barrel.

Put new life into your business. Stabilize your cracked gasoline with Du Pont Antioxidants. Start today. Write, wire or call for samples and complete information. E. I. DU PONT DE NEMOURS & CO., INC., Organic Chemicals Department, Wilmington, Delaware.

DU PONT

ANTIOXIDANTS

Late Fields

OKLAHOMA

Salt Water has broken in on at least three of the producing wells in the Polo Pool in Noble County, Oklahoma. Stanolind Oil & Gas Co.'s No. 2, NW SW NW Section 27-22-2w, is reported to be making 8 per cent water; and its No. 4, NE SW NW Section 27-22-2w, 12 per cent water, and the Sinclair Prairie Oil Co.'s No. 1, SW SE NE Section 28-22-2w, 6 per cent water. The wells have an allowable production in February of 178 bbls. of oil per day.

What is believed to be the Cisco oil formation found prolific in the North Texas Field is producing oil in the new Altus Field in Jackson County, Oklahoma. Gypsy Oil Co.'s No. 1 Edwards, SE cor. Section 3-1n-20w, found pay at 1,653 feet. The well swabbed 30 bbls. of 42 gravity oil in 24 hours.

KANSAS

Johnson & Carey's No. 1 Dyck, in Section 35-22-5w, Reno County, Kansas, is a hole full of water from Wilcox sand at 3,975-85 feet. This was an important test which had been closely watched.

GULF COAST

HOUSTON, Tex., Feb. 19.—Humble Oil & Refining Co.'s No. 1 Middleton, wildcat east of Anahuac, Section 58, H.&T.C. Survey, Chambers County, apparently opened new field when it cored saturated Frio sand from 7,030-51 feet and on a 10-minute drill stem test built up 100 pounds of pressure and recovered the drill stem full of 33.5 gravity oil.

Surface Methods Can Produce as Much Crude

(Continued from Page 16)

of these lenses and layers are not uncommon.

There are many proposed and practical methods of increasing the recovery in underground mining. These include heating by steam or hot water, cleaning with benzol, alcohol or gasoline, and water flooding with soda ash or detergent solutions. None of these methods can be claimed available only for underground mining, since it is apparently safe to predict equal success for the application of heat and solvents through wells from the surface. The subsequent recovery of most of the organic liquid solvents through pumping wells is assured possible from experiences in water flooding by the five spot method.

A number of papers on oil mining have been published and in these the engineering and economic angles of the problem have been adequately presented. It was the purpose of this discussion to offer a number of additional views on theoretical phases of this engineering problem and to suggest the possibility that our present surface methods and their future developments may become more important in our problems of secondary recovery.

PEW HEADS COMMITTEE

R. E. Haylett, chairman of the A.P.I. Central Committee on Refinery Technology, has appointed Arthur E. Pew, Jr., of the Sun Oil Co., as chairman of the Committee on Standardization of Refinery Equipment, together with the following members:

R. P. Anderson, A.P.I. secretary; D. G. Brandt, H. L. Doherty & Co.; L. L. Davis, Continental Oil Co.; E. W. Gard, Union Oil Co. of California; W. M. Giffen, Shell Oil Co.; J. G. Glasgow, Gulf Refining Co.; A. J. Ely, Standard Oil Development Co.; John S. Hess, Sinclair Refining Co.; K. V. King, Standard Oil Co. of California; W. D. Kinsell, Pure Oil Co.; R. C. Powell, Texas Co.; Walter Samans, Atlantic Refining Co., and George W. Watts, Standard Oil Co. (Indiana).

WESTLAND OIL

Westland Oil Royalty Co. has announced payment of 12 per cent dividends during 1934 on outstanding Class A stock of $10 par value. J. A. Wolf was re-elected president and chairman of the board, and directors and other officers were re-elected.

Men Working in Uncontrolled Stations Not Employees of Supplying Company

Meeting the objection to the early ruling that the supplying company must be responsible for the employes of oil marketing facilities, Administrator Ickes approved the following order on February 16. The interpretation of an employe as approved follows:

"The term 'employe' includes all persons working at a filling or service station or at any garage or other institution selling petroleum products to the public who work subject to the direction and control of another regardless of the nature of their duties, their mode of compensation or the legal form of their contract if by its terms or under its operation such direction and control exists.

"Specifically, and without limitation of the general definition, the operator of a service or filling station and his helpers are the employes of the supplying oil company when such company owns or holds such station under lease and such company leases or subleases such station to the operator on a lease and sales contract or any arrangement which insures the exclusive sale of the gasoline of such company at the station and which also insures the operation of the station in such manner as the company may direct, irrespective of whether these results are accomplished directly by the terms of the contract of by virtue of powers of cancellation or forfeiture or otherwise, provided, however, that when a filling or service station is operated by the party from whom the supplier leases the station under a lease and agency or lease and license agreement, the party operating such station and his helpers shall not be considered employes of the supplier.

"When an opertaor has a substantial sum invested in the operation of a service or filling station, whether such operator and his helpers are employes of the supplying oil company, shall be determined in accordance with the provisions of the general definition."

It is the intention of this order that the interpretations of Article 2, Section 3, when so modified shall read as follows:

"Employes of filling and service stations changed from salary to commission form of operation or vice versa since July 20, 1933, must receive in commission and/or salary such an amount that his income will not be less than his weekly salary July 20, 1933.

"Part time employment shall be permitted under this section.

"A part time employe is one employed on a definite part time basis or one engaged in emergency or fill-in work.

"There shall be no alternation of regular and part time employment whether provided by contract or otherwise so as to in any way defeat the purpose of this code under the National Recovery Act.

"The Minimum wage for a part time worker in an employment described in this section is the pro rata share of the minimum wage per week. This is arrived at by dividing the weekly minimum rate applicable by 48, the maximum hours. Example: If the minimum wage per week in your city is $15, this divided by 48 equals 31¼ cents per hour. If employe works 24 hours during the week his wage would be 24x31¼ cents equal $7.50.

"The term 'employe' includes all persons working at a filling or service station or at any garage or other institution selling petroleum products to the public who work subject to fhe direction and control of another regardless of the nature of their duties, their mode of compensation or the legal form of their contract if by its terms or under its operation such direction and control exists.

"Specifically, and without limitation of the general definition, the operator of a service or filling station and his helpers are the employes of the supplying oil company when such company owns or holds such station under lease and such company leases or subleases such station to the operator on a lease and sales contract or any arrangement which insures the exclusive sale of the gasoline of such company at the station and which also insures the operation of the station in such manner as the company may direct, irrespective of whether these results are accomplished directly by the terms of the contract or by virtue of powers of cancellation or forfeiture or otherwise, provided, however, that when a filling or service station is operated by the party from whom the supplier leases the station under a lease and agency or lease and license agreement the party operating such station and his helpers shall not be considered employes of the supplier.

"When an operator has a substantial sum invested in the operation of a service or filling station, whether such operator and his helpers are employes of the supplying oil company, shall be determined in accordance with the provisions of the general definition.

"If an individual owner who operates a service station without help adds an employe, said employe shall be subject to the provisions of this section governing minimum wages and maximum hours of work.

"It is a violation of the code to change the status of present employes by any device, whether by purported joint ownership, or by the setting up of executive departments or otherwise; likewise, additional employes may not be employed to fill newly created positions of this character."

Kingsbury Reappointed to Committee by Ickes

WASHINGTON, D. C., Feb. 19.—Reappointment of Kenneth R. Kingsbury, president of Standard Oil Co. of California, to the Planning and Coordination Committee was today announced by Administrator Ickes. He was appointed to the vacancy caused by his resignation March 31, 1934. This brings the membership of the committee to its full capacity, 23.

STANDISH BUYS PIPE LINE

The Standish Pipe Line Co., a subsidiary of the Phillips Petroleum Co., has acquired all the assets of the Central Kansas Pipe Line Co. and will take over the system on March 1. The line takes oil from pools in Barton, Rice, McPherson and Reno Counties. The Standish company will lay 11 miles of line from the Ritz Pool to McPherson to connect its system with that of the Central Kansas. The Phillips Petroleum Co. will become an oil purchaser and the Standish company an oil carrier in the pools served by the Central Kansas system.

ICKES' COMMENT ON PACT

WASHINGTON, D. C., Feb. 19.—Asked for comment on the outcome of the governor's conference at Dallas, Administrator Ickes said he had not yet seen a copy of the compact agreed to, but from newspaper reports it was just what he expected. In his opinion formulation of an effective interstate compact is impossible. The outcome of the conference, he said, is one of the strongest arguments yet seen for federal control. Mr. Ickes reiterated that he is for federal control and that his position is well known.

TEXAS UTILITY BILL

AUSTIN, Tex., Feb. 19.—The Texas house passed finally Tuesday Representative Lotief's bill to prohibit utilities from reducing prices or discriminating in charges for service to drive out competition or maintain monopoly. The vote was 109 to 6.

Conference Approves Interstate Oil Compact

(Continued from Page 9)

vent physical waste and unrestricted production has been found by engineers of the State to constitute physical waste.

Cole Committee Watched

The attitude of members of the Cole Committee on the interstate compact adopted here and signed by representatives of the nine states will be watched with especial interest by the authorities of the different states. The fact that official representatives of nine oil producing states were able to agree unanimously on an interstate compact and have bound themselves to recommend ratification of this compact by the legislatures of their states was stated as being the greatest forward step taken in matters affecting the petroleum industry in years. Governor Allred said he is confident great good was accomplished at the conference and that the compact will form the basis of still further benefits to the states, the industry and to consumers throughout the nation.

Governor Allred wrote an interstate compact which, with a few changes, was the document finally adopted and signed. The changes were taken largely from a form of compact prepared by Governor Marland. Each of the states represented showed a strong disposition to "get together" and concessions were made by all representatives.

With protection of stripper wells regarded as of such vital importance in the conservation of the nation's petroleum resources and interests of consumers of petroleum products throughout the United States woven so closely with the necessity of conserving for continued and future use the great reserves represented by these stripper wells, it is possible further suggestions might be made either by members of the Cole committee or others interested in the matter as to best ways these interests might be protected.

Outstanding in the conference was the sincere desire upon the part of each and every representative to formulate the best compact the laws of the various states would permit. Judge Downing of Colorado was helpful in ironing out difficulties when they arose. Northcutt Ely, executive assistant to former Secretary of the Interior Wilbur, and Patrick J. Hurley, former Secretary of War, because of their previous experience, were of particular aid in getting the compact into proper form. Elwood Fouts, prominent attorney of Houston, Colonel Thompson, J. R. Parten and others of Texas sat in on the deliberations and gave the state representatives the benefit of their experience and advice.

The official representatives at the conference included: John W. Olvey for Arkansas; Robert L. Patterson for California; Warwick M. Downing for Colorado; William Bell for Illinois; Ralph Pryor, T. C. Johnson and E. W. Shawver for Kansas; Senators G. F. Van Eenenaam and Gerald Cotter for Michigan; Hiram M. Dow, Dr. E. H. Wells, Frank Veseley and Hugh Burch for New Mexico; Governor James V. Allred and Col. Ernest O. Thompson for Texas; Governor E. W. Marland, Attorney General Mac Q. Williamson, Patrick J. Hurley, Northcutt Ely, Tom Anglin, former Governor W. J. Hollaway, C. C. Brown, George England, W. H. McFadden, George Marland, C. A. Robinson, Senators Garvin, Fischl, Taylor, MacDonald and Willbanks and Representatives Ben Ellis, Walter Johnson, Joe Chambers, T. W. Eason, Con Long and Aubrey Kerr for Oklahoma.

MAGNETIC STORM

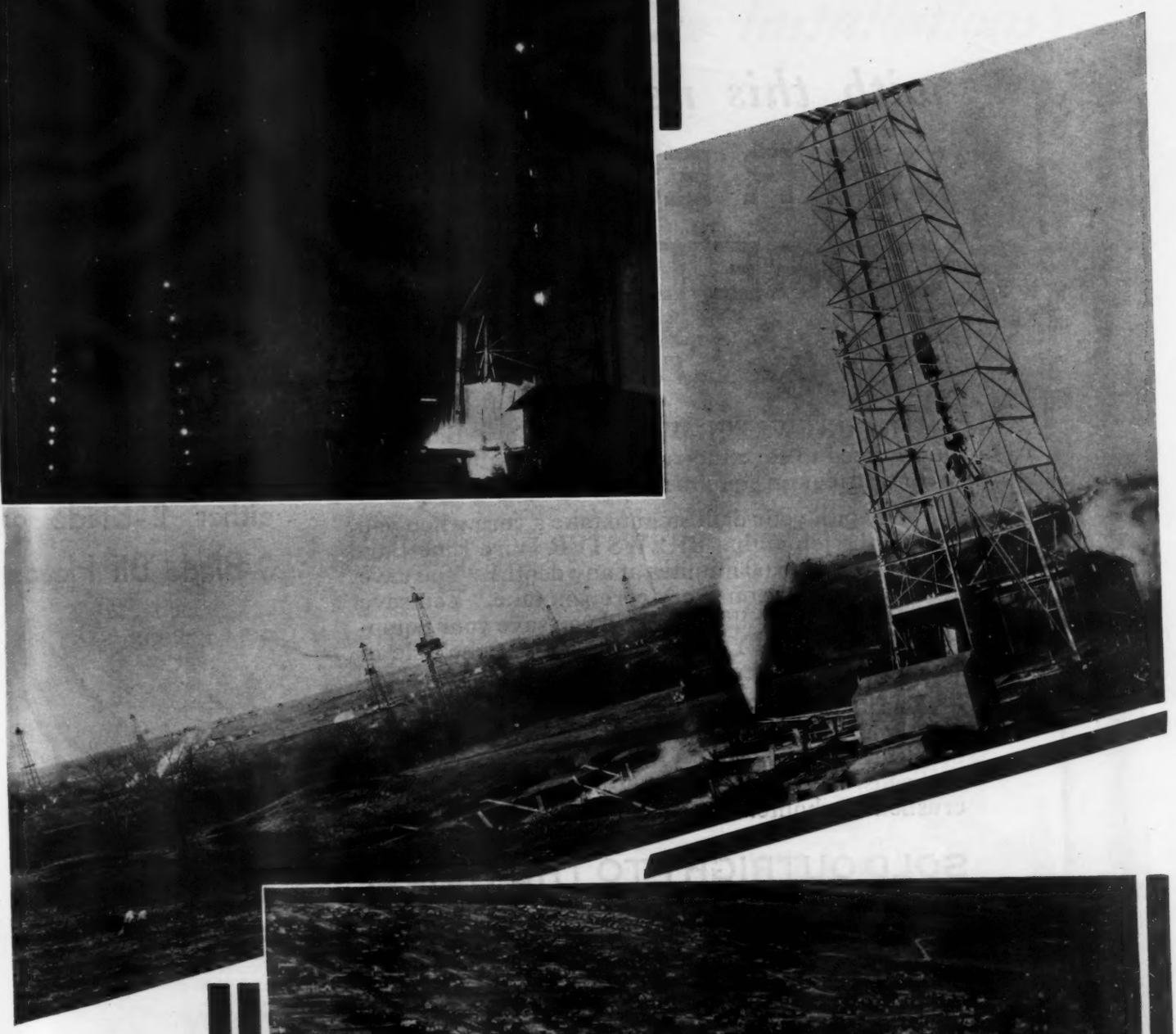
Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey reports a severe magnetic storm starting at 8 p.m. (C.S.T.) February 13 and ending 8 a.m. (C.S.T.) February 15. Telegrams follow:

"Storm began thirteenth. Two. Severe."

"Storm ended fifteenth. Fourteen."

the FITTS POOL

Pontotoc County, Oklahoma

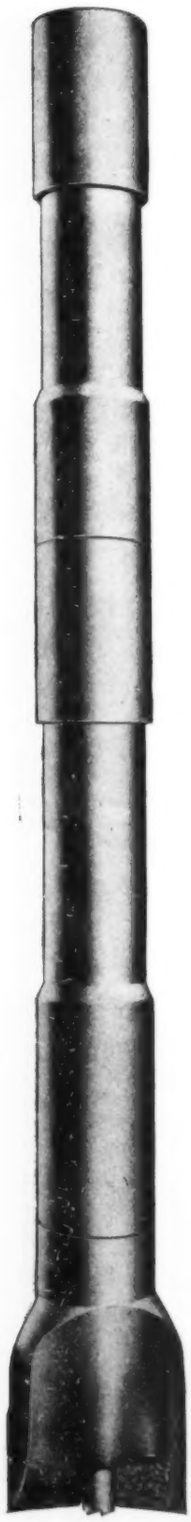


Top: Night Drilling Scene.

Center: View in the Fitts Pool.

Lower: Aerial View, Ada, Oklahoma.

SPEED UP YOUR CORING JOBS



with this new, improved

WIRE LINE CORE BARREL

by Brewster

The BREWSTER Wire Line Core Barrel is guaranteed to save thousands of dollars in time and wear and tear on equipment in drilling any deep well.

Why pull your drill stem to take a core when you can do the job with a BREWSTER Wire Line Barrel in from 40 to 60 minutes at any depth? You save from 3 to 6 hours on every core you take. You save your expensive drilling line and you save your equipment in general. You keep the walls of the hole in much better condition.

The BREWSTER Barrel is time-tried and constantly improved. Equipped with 2-blade and 3-blade bit heads as illustrated—the famous BREWSTER bit heads, set with Carbolite inserts and dressed with crushed Carbolite.

Equipped with either 2-Blade or 3-Blade Bit Heads.

SOLD OUTRIGHT TO THE TRADE!

For sale or lease anywhere. A part of our Complete Core Barrel Service in Gulf Coast and East Texas fields. Write for descriptive literature on our BREWSTER Perfection Core Barrel (Standard) and our BREWSTER Wire Line Barrel.

THE BREWSTER COMPANY

PHONE 3181.....SHREVEPORT, LA.

BRANCHES

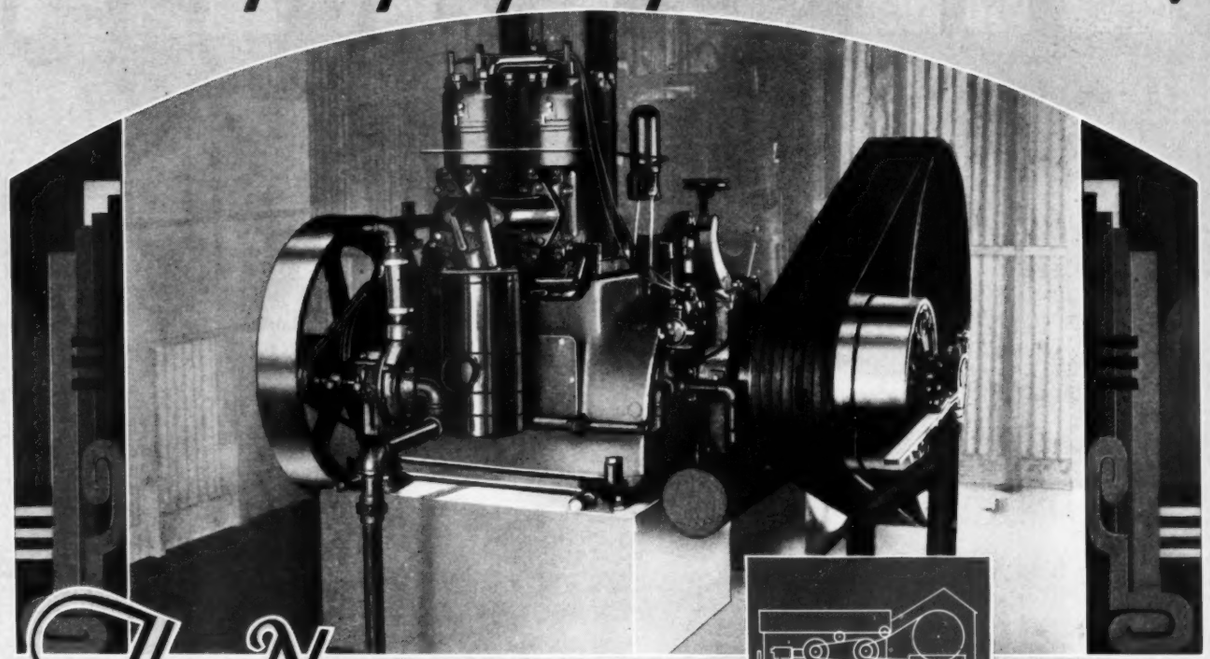
Longview, Texas
313 E. Cotton St.,
Phone 781

Houston, Texas
2000 Harrington,
Phone C-6811

Lake Charles, La.
Broad & Shattuck,
Phone 256

Export Office:
Acme Well Supply Co.
136 Liberty St.,
New York City, U.S.A.

Would you like to SAVE $700 on pumping engine installations?



The New CLARK "Bobcat" Vertical Pumping Engine

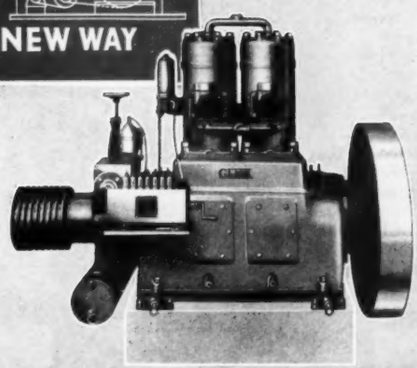
IS ACHIEVING THIS SAVING

. . . . and delivers better performance, too.

How this important saving is made is indicated by the diagram. Vertical design and short belt save approximately 50% in floor space, 55% in foundation costs, 40% in building costs. One idler is eliminated, as engine is mounted on slide rails. There is a material reduction in belt cost and upkeep.

Engine is 2-cycle, 40 H. P., convertible, full Diesel or gas. Designed especially for oil well pumping, it operates at moderate speed, insuring long life. It is ideal for chain or gear driven pumping units.

The CLARK "Bobcat" has been thoroughly proven in the field. For the complete facts mail coupon or phone our nearest office.



CLARK BROS. COMPANY
Olean, New York, U. S. A.

Export Office: 150 Broadway, New York. Midcontinent Sales Offices and Warehouses: Tulsa, Oklahoma, and Tyler, Texas. West Coast Office: Smith-Booth-Usher, 228 S. Central Av., Los Angeles, Cal. Foreign Offices: 72 Turnmill St., E. C. 1., London, England, and 4 Str. Central Poestas, Bucharest, Roumania.

CLARK

MAIL THIS COUPON

Clark Bros. Co.,
Olean, N. Y.

Please send me without obligation complete facts on your new CLARK "Bobcat" Pumping Engine.

NAME_____

STREET_____

CITY_____ STATE_____

QUALITY-QUANTITY-SERVICE

TAUBMAN at Ada

BRANCHES AT:

OKLAHOMA CITY, Oklahoma
Alex Taubman Tel. 3-9033
ADA, Oklahoma
Ted R. Miller Tel. 534
SEMINOLE, Oklahoma
Dan Kornfeld Tel. 557
DALLAS, Texas
A. L. Kornfeld Tel. 8-1710
WILLOW SPRINGS, East Texas
Harry Miller Tel. 1237
BORGER, Panhandle
J. D. Shutters Tel. 23
HEBBRONVILLE, South Texas
M. N. Sole Tel. 199
WICHITA, Kansas
Jay Kornfeld Tel. 2-5050
McPHERSON, Kansas
Joe Marks Tel. 739

REPUBLIC
ELECTRIC WELD
CASING TUBING
LINE PIPE

Pittsburgh Products
Pittsburgh Seamless
CASING TUBING
DRILL PIPE

The type of service that is the outstanding example of Taubman leadership is available at Ada through our completely stocked branch in charge of Ted R. Miller, known throughout the Mid-Continent for his ability in rendering dependable service.

TAUBMAN SUPPLY CORPORATION

TAUBMAN
Supply Corp

World's Largest Line

of

SLIPS

MANUFACTURED BY

TEXAS IRON WORKS

1401-1423 Maury Street

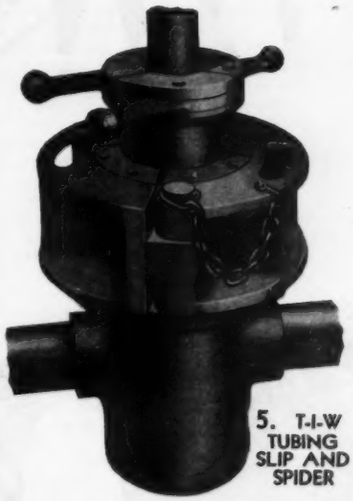
HOUSTON, TEXAS

1. T-I-W 3-PIECE RELINER SLIP

2. T-I-W 2-PIECE RELINER SLIP

Four types of rotary slips and one type of tubing slips, all tested and proved in fields throughout the mid-continent, give Texas Iron Works the most complete line of slips in the world. Three types of rotary slips equipped with renewable liners, for low cost maintenance and to enable them to handle several sizes of pipe. All types available with friction teeth—can not cut pipe. For complete description, see your Composite Catalog, or, write for illustrated catalog. Sold through supply stores in all fields.

1. T-I-W Regular Three-Piece Reliner Type Slip. 13¼" bearing surface against pipe.
2. T-I-W Two-Piece Reliner Type Slip. Showing the two halves, also liners for same. 13¼" bearing surface against pipe.
3. T-I-W Friction Slip and Adapter. 14½" bearing surface.
4. T-I-W Extra Long Three-Piece Reliner Type Deep Well Slip with adapter which makes 62% added length possible, giving 20" bearing surface against pipe.
5. T-I-W Tubing Slip and Spider with special releasing features.



5. T-I-W TUBING SLIP AND SPIDER

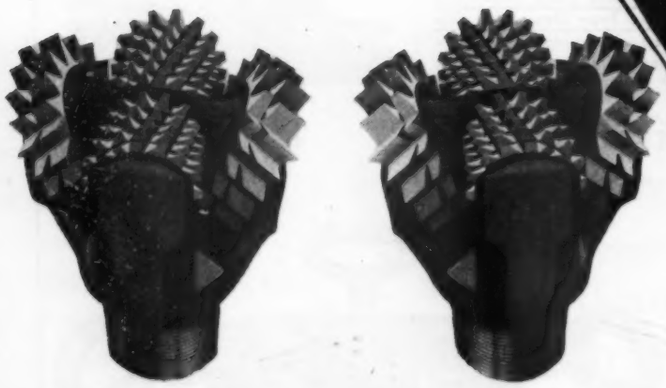
3. T-I-W FRICTION SLIP AND ADAPTER

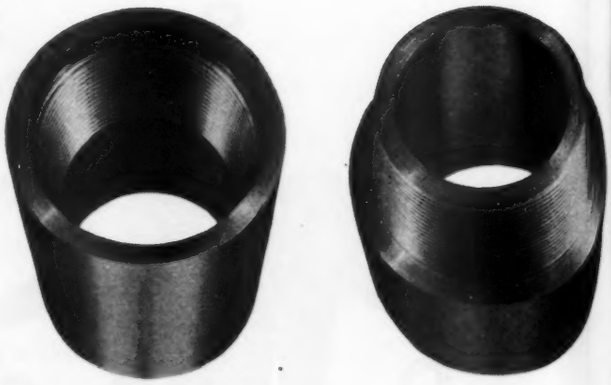
4. T-I-W EXTRA LONG DEEP WELL SLIP WITH ADAPTER

In the Fitts Pool *Oklahoma*

INCREASED DRILLING SPEEDS

DECREASED DRILLING COSTS





REED BITS FOR SPEED

EVEN WITH LIGHT DRILLING WEIGHT REQUIRED FOR STRAIGHT HOLE DRILLING

REED FULL HOLE TOOL JOINTS

FOR FASTER HOLE AT LESS COST

REED ROLLER BIT CO.

WHEREVER THERE IS ROTARY DRILLING

John Fitts' Confidence Oil Was There Led to Discovery of the Pool

By T. F. SMILEY

Always there have been things that couldn't be moved. One of them was John Fitts' conviction there was oil in what geologists called Franks Graben, in Pontotoc County, Oklahoma.

Most of the geologists assured John he was wrong. But he wasn't.

And the Fitts Pool, named in generous acknowledgment of his refusal to be argued out of a studied opinion, is proof of that.

Mr. Fitts was 14 when the family in 1893 moved from the old home in Georgia to Oklahoma Territory, settling in Perry, Noble County, one of the seven counties added to the territory in that year through throwing the Cherokee Strip open for settlement. The boy attended high school in Perry and soon afterward the family moved to Ada, Pontotoc County, in the Canadian River Valley, some 18 miles north of the crest of the Arbuckle Mountains.

The original hamlet consisted of a store and a little cluster of dwellings. When the Frisco Railroad was built at the turn of the century the postoffice and neighboring buildings were about half a mile from the tracks. From that time buildings went up close to the railroad and with the growth of population the original settlement was absorbed. Today, much changed and imbedded among newer structures, it is pointed out by old-timers, just a little north of the business district.

First as a Guide

Young John and his father often fished and hunted in woods and streams nearby, and the boy came to have an intimate knowledge of the surrounding country. Thus it came about that when J. A. Taff explored that area for the U. S. Geological Survey in 1900-1902 he engaged John as a guide. But the young man was more than a guide. With a bent for nature study, he was fascinated by the fresh sources of knowledge opened up to him by his daily contact with the experienced geologist, who explained the significance of outcroppings and who told why he had named certain formations the Simpson, the Viola, the Hunton and the Wapanucka.

This was the beginning of an extended course in practical field geology. Other geologists and paleontologists came. They included the late Dr. Sidney Powers, Dr. Charles E. Decker, Dr. J. B. Umpleby, Dr. Charles N. Gould, Dr. Frank C. Greene and Dr. George D. Morgan. These were not seeking underground formations favorable for the deposit of petroleum. They visited the region primarily because it offered one of the best spots in the country for the study and collection of fossils.

John stood beside outcroppings with these scholarly men and heard them discuss and argue over fossil specimens. He asked questions. He thought over what he heard. He got books on geology and paleontology. From day to day he broadened his knowledge of this subject which had taken such a hold on him.

John's reputation as a camp guide became so well established that the annual trips of students for geological study from universities in Missouri, Oklahoma, Arkansas and other states always engaged him as camp guide. By this time he had acquired so thorough an acquaintance with the fossilology of the region and with the terminology of this branch of science that he was of genuine aid to the professors who led these expenditions. He talked about brachiopods, trilobites and elliptocephala asaphoides with the same ease and assurance that once had marked his comments on the relative merits of flies and spinners in fishing.

Petroleum Geologists, Too

Petroleum geologists came, too, sent by various oil companies to study the region and gather type samples of fossils and formations for detailed study in their laboratories. Here again young Fitts' services were in demand, and to the large fund of information he had acquired concerning the geological sections and the fossil remains of that district he added more specific facts about the methods employed by nature in storing reservoirs of petroleum and gas beneath the earth's surface.

It probably is within the truth to say that nobody now had a more thorough knowledge of Pontotoc County's geology than Mr. Fitts. He was treated as an

JOHN FITTS

equal by college professors and by consulting and petroleum geologists. They referred to him as an authority on geological features of the Arbuckle uplift. But the opinion prevailed among geologists generally who had studied the region that no oil deposits of commercial size existed there. They said the excessive faulting had allowed oil and gas to escape in such volume that the reservoirs had been depleted of these substances if they had ever been formed.

The area is sunk below the surrounding terrain. The name graben (German for grave) is applied to similar areas in Europe, so this tract in Pontotoc County, containing the village of Franks, was called Franks Graben. It extends 18 miles east and west, is 12 miles wide at the eastern end and 6 miles wide at the western end.

Taken at the derrick of the Ada Chamber of Commerce test well drilled in 1906 and abandoned at 645 feet because of crooked hole. Left to right, front row: John P. McKinley, J. E. Bills, W. H. Ebey. Back row: Ben K. McKinley, Mrs. J. E. Bills, Mrs. W. H Ebey, Mrs. John P. McKinley

Mr. Fitts' conclusion as to the possibility of oil deposits was in conflict with that reached by the very geologists under whom he had studied the underground features of the region. He recognized one of the outcrops as the Wilcox sand of the Simpson section. He believed there was oil in it in commercial quantity. In 1917 he interested local capital and drilled a cable-tool test to the Wilcox, which was reached at 1,140 feet. The hole was carried into the formation 75 feet, but found only asphalt and sulphur water. This well was about 3 miles south of Ada. Mr. Fitts then got financial backing for another test, this time about 3 miles north of the town. But here again was sulphur water, which flowed from the mouth of the casing.

The two failures did not move Mr. Fitts' conviction. He believed as firmly as ever that there was some spot in the area where the oil and gas-bearing formation had not been drained by seepage resulting from subsurface movements, and that systematic drilling of test wells would reveal the spot. But no money was available for continuance of wildcat drilling, so he was unable to put his theory to the test. The logs of the two dry holes were of immense value in later drilling operations.

Accompanies Doctor Morgan

Dr. George D. Morgan, recently appointed a member of the University of Texas board of regents, went to Pontotoc County in 1924 for the Empire Oil & Gas Co. and geologized the "Stonewall Quadrangle." He made his headquarters in Ada for 18 months while doing this work and Mr. Fitts frequently accompanied him. On Doctor Morgan's recommendation Empire acquired a large block of leases. The company did no drilling, however, and eventually the land was clear again. McCraw & Whitney had put down a test in Section 35-1n-8e about 1929, finding a little oil, but abandoning the test as a failure.

In 1932 Gus Delaney, of Ada, on the strength of Mr. Fitts' theory and catching something of the latter's enthusiasm, started a hole in partnership with B. C. King, of Ada, and Sam Miller, of Tulsa. At 1,185 feet they struck a gas flow which blew the cable tools up in the hole, necessitating a fishing job. They substituted rotary tools and carrying the hole past the gas sand they had encountered, they went to the Atoka formation at 1,700 feet, where in February, 1933, they completed the well as a gasser rated at 56,000,000 feet daily.

In 1933 Harry L. Wirick and A. D. Cochran, of Okmulgee, Okla., and Fred G. Moser, Tulsa land man, acquired a block of about 1,800 acres and made a deal with Edward H. Moore, Tulsa oil man, by which the last named financed the drilling of a cable-tool test well in Section 29-2n-7e, designated as No. 1 Wirick. This well, finished in August, 1933, at a total depth of 3,451 feet, yielded 65 bbls. of oil daily from the Hunton.

Rush for Leases Started

Following this No. 2 Wirick, a north offset to No. 1 Wirick, was drilled by Edward H. Moore and others to the Simpson. This well, bottomed at 3,990 feet, was reported good for 60 bbls. an hour. It started a rush for leases and a lively drilling campaign soon was on in the area which one geologist after another had condemned. A new and important pool was in the making because one man's conviction oil was there could not be shaken. John Fitts had been vindicated.

Field development now has reached a point where the average potentials of the wells completed exceed 3,500 bbls. daily, with close to 350 locations still to be drilled in the proven area. It probably will be midsummer before the present known field is drilled up, with wildcat ventures likely to reveal further productive spots in Pontotoc and other nearby counties.

The area presents peculiarly speculative features to the wildcatter because of the broken character of the subsurface formations, with the consequent impossibility of forecasting with confidence what will be found in a certain test. In a bulletin published by the Oklahoma Geological Survey in 1927 R. A. Conkling said concerning the geology of Pontotoc County: "Although we have a fair grasp of subsurface conditions of the county, the area is near the Arbuckle Mountains, which have undergone numerous orogenic movements with the resulting unconformities, so that every well encounters something new."

The name Fitts Pool is really a product of evolution. At first the pool was referred to as the Graben. Then they called it Fitts Graben. Soon the practice grew of saying Fitts Pool in designating

the producing field and Franks Graben in designating the whole sunken area. The oil field nomenclature committee of the Mid-Continent Oil and Gas Association officially named the field itself Fitts Pool after development started, in recognition of the fact that discovery of oil there was directly attributable to John Fitts' unshakable belief.

Mr. Fitts is memorialized too in the boom oil town Fittstown, at the western edge of the field. Indicative of the larger place which he has come to occupy in the field of Oklahoma geology is the fact that he has been made an associate member of the American Association of Petroleum Geologists. At various times he has been guest speaker before the Tulsa Geological Society and many other such organizations.

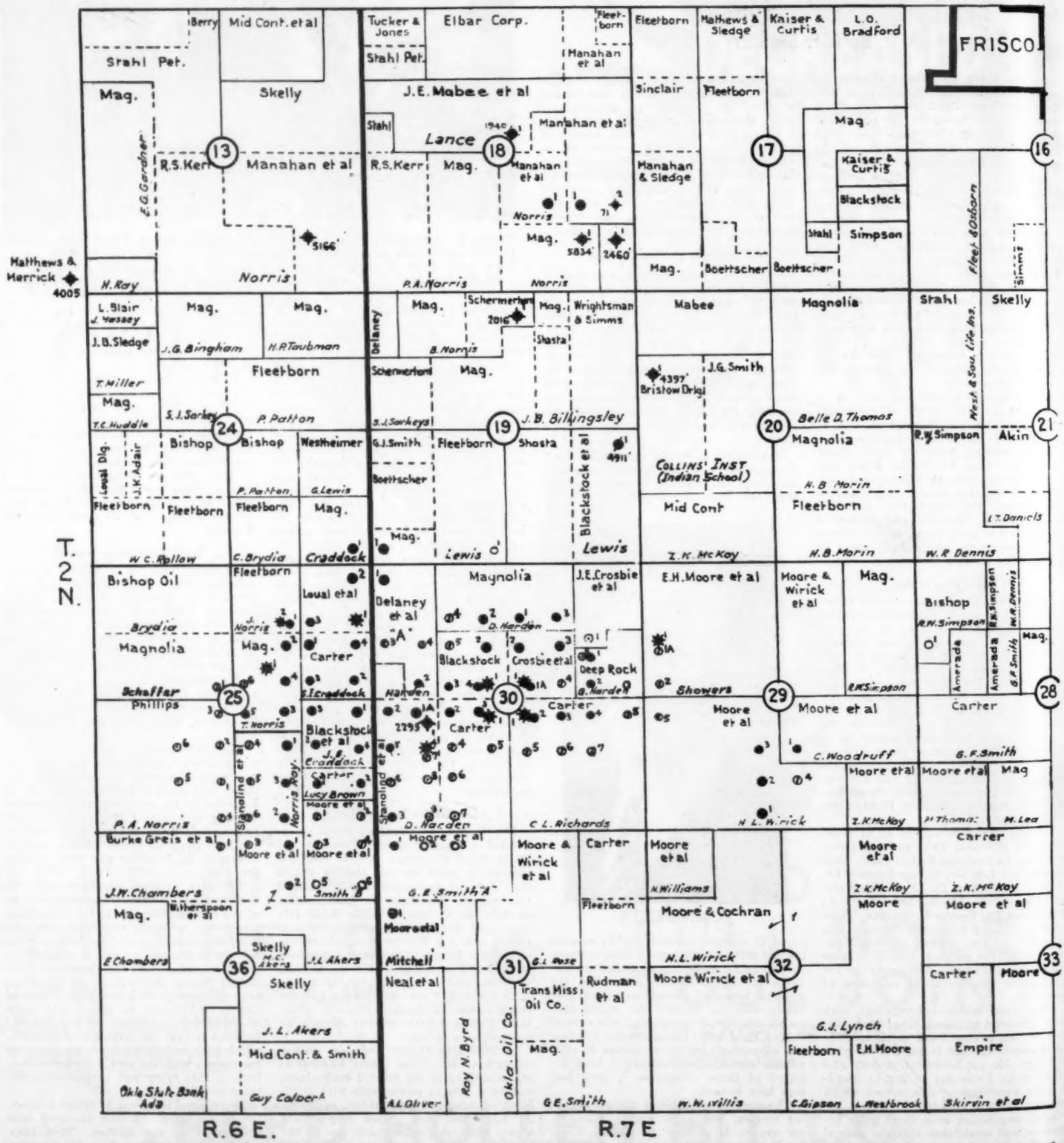
Chamber of Commerce Test

Chronicles of early exploratory work for oil in Pontotoc County must include mention of a wildcat test sponsored by the Ada Chamber of Commerce in 1906 near Little Sandy Creek on the east side of the section line in Section 27-4n-6e. The location was close to the city limits of Ada. Dr. Charles A. Thomas, of Ada, worked as tooldresser. The contract with the city of Ada stipulated that the hole should be carried to 1,600 feet, but Doctor Thomas says the test was abandoned at 645 feet on account of a crooked hole. This is believed to have been the first test well drilled in the county.

Ada got its name from Miss Ada Reed, daughter of the town's first postmaster.

The name Pontotoc has an important place in the history of the Chickasaw Indians. Originally it was the name of a little stream in northern Mississippi, near which the Chickasaw council house stood. The treaty of Pontotoc (spelled also Pontotock), providing for sale of all the Chickasaw lands in the east, was negotiated at that spot. The name is made from the Chickasaw words "panti" (cattail flag) and "oktak" (prairie). One supposition is that the name referred to some familiar place along the creek where it flowed through a marshy prairie in which cattail flags flourished. When the Oklahoma constitutional convention in 1907 provided for organization of counties a part of the old Pontotoc County of the Chickasaw Nation was designated as Pontotoc County, thus perpetuating the name in the state.

Ownership Map of the Fitts Pool, Pontotoc County, Oklahoma



At the time this map was compiled there were 7 locations; 9 rigging up; 31 drilling; 52 oil wells; 6 gas wells; 8 dry holes and 1 abandoned location in the Fitts Pool, making a total of 114 operations accounted for out of a total of approximately 400 possible locations in the field

Bridgeport Service

ANYWHERE

While our Stores and Yards are located in the active fields of Texas, Oklahoma and Kansas, our service and equipment is available throughout the world.

A complete Supply Service—Manufacturing—Rentals—Sales—Rotary and Cable—Pumping and Production Equipment.

TEXAS

Aquagel and Baroid stocks over entire oil territory.

Complete rental stocks including Casing Tools, Rotary Overshots, Rotary Reamers and 2, 2½, 3, 4, 5 and 6-inch Line Pipe.

Sales Service at Dallas and Fort Worth. Two experienced men. Telephone calls appreciated. Dallas phone: 3-1225; Ft. Worth Phone: 4-6228.

One New 100 H.P., 250-lb., W. P. Lucey Boiler at Houston. A Bargain. Three 125-H.P., 300-lb., W.P. Kewanee Boilers, like new.

Complete stocks of American Wire—Rotary, Cable and Tubing and Rod Lines.

Each section of state served with complete stocks of new and used material.

Two Rotaries. Can be bought in single units if desired. Good Rotary Equipment is hard to find.

Every size, up to 30-foot in length, Bridgeport Rotary Drill Collars.

25,000-feet 2½-inch; 11½-thd., Used Line Pipe.

10,000-feet 2-inch, 11½-thd. Regular (not upset) used lapweld tubing.

Several strings 6⅝-in. Bridgeport Drill Pipe Casing—new threads, new collars, long heavy pipe—a real money saver.

OKLAHOMA

The only complete Rotary and Cable Mud Service. Full time Engineer—services free.

A Sales Office in Tulsa. Also buyer whose entire time is devoted to dealing in used pipe and material. Always pay spot cash.

Bridgeport Drill Collars and Rotary Reamers carried in stock by our distributor Carson Machine & Supply Company at Fittstown (Ada).

Close out prices on Guiberson Disc Bits and parts.

Burt Swabs for rental as well as for sale. Quick action night or day.

Bridgeport 6⅝-in. Drill Pipe Casing—new threads and collars, heavy long pipe. Positively the best buy in the oil country. Recommended for both Rotary and Cable holes.

Several rebuilt 3-KW Moon Generators. Fully guaranteed.

20,000-feet used 2-inch Pipe.

15,000-feet used 3-inch Line Pipe (Good grade, low price.)

10,000-feet used 4-inch, 8thd. used Line Pipe.

20,000-feet 5 3/16-in., 13-lb. Line Pipe.

25,000-feet 6⅝-in., 20-lb. Used Line Pipe.

KANSAS

One used Fort Worth Spudder Complete.

Several Rebuilt Gas Pumping Engines. 25, 35, 40-H.P., "Superiors," "Weber," "Marions" with Clutches.

One 12x12 Ideal Ajax Twin Cylinder Rotary Drilling Engine. Completely overhauled and ready to go.

Approximately 2900-feet used 4½-inch Drill Pipe with Tool Joints on. In doubles. Priced very low.

Two 90 H.P., 6-cylinder, Fairbanks-Morse Diesel Oil Engines with Clutches, Starter and Fuel Tanks.

2500-feet plain end beveled 6⅝-in. Drill Pipe for Line Pipe.

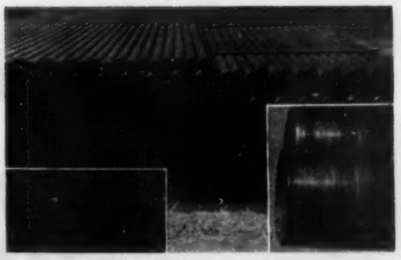
Stocks of Aquagel and Baroid located in convenient points over the state.

2200-feet, 5-inch O.D., 15-lb. 8thd. 6½-C, Seamless Casing.

Complete stocks of 5 3/16-in.; 7-in. O. D.; 8¼-in.; 10-in.; 12½-in.; 15½-in.; and 20-in. National Tube Casing. One joint or a complete string.

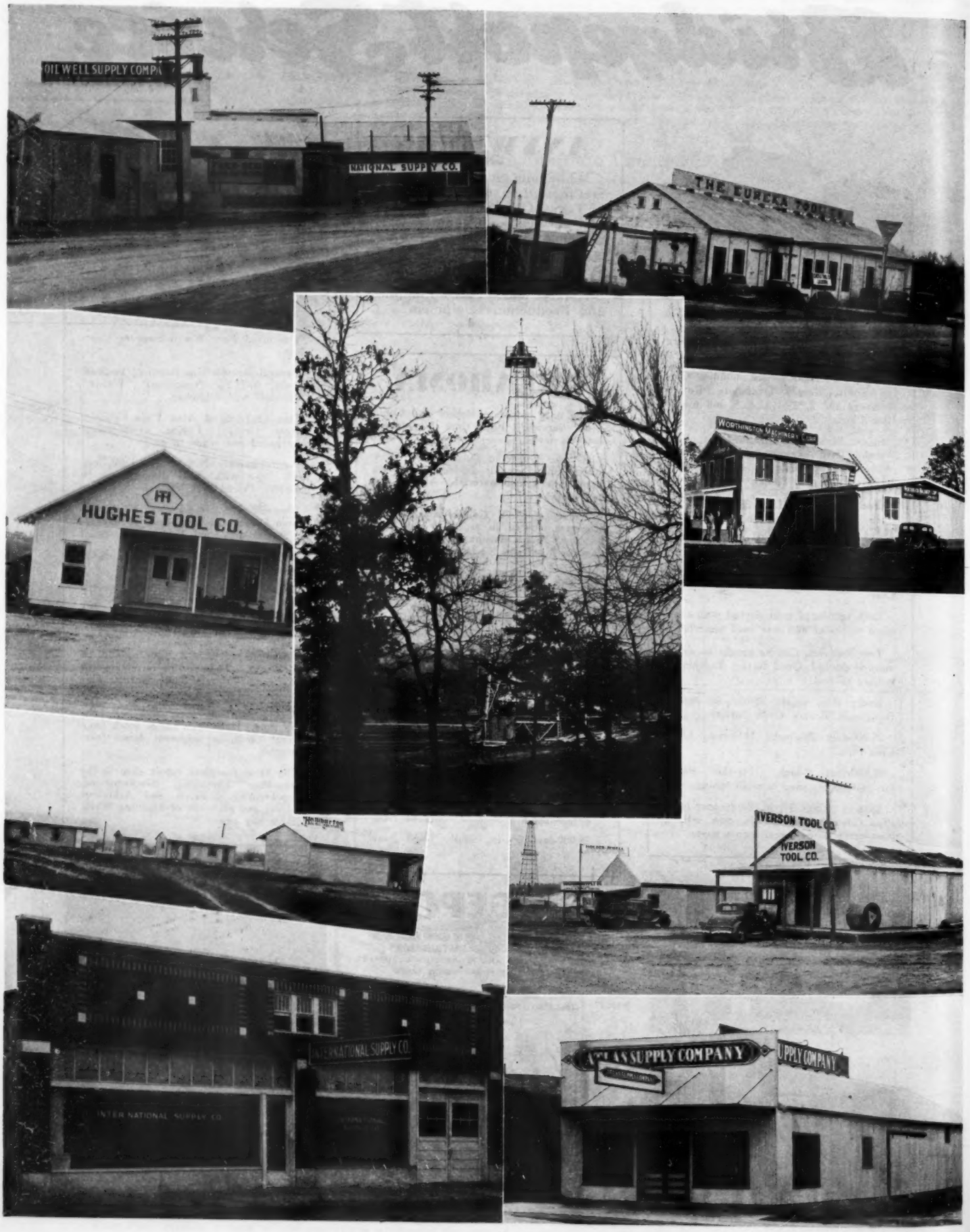
2, 3 and 4-inch. New National Tube Line Pipe. Deliveries out of stock from several yards, or shipment direct from Memphis.

The Most complete repair shop in the state—Pipe Threading, Blacksmithing, Heat-Treating, Electric and Acetylene Welding and all kinds of Machine Work. Service any time.



BRIDGEPORT
MACHINE COMPANY
MANUFACTURERS AND DISTRIBUTORS
OIL DRILLING-FISHING AND PRODUCTION EQUIPMENT
GENERAL OFFICE AND WORKS: WICHITA, KANSAS

Supply and Equipment Companies Located in Fitts Area



Now YOU CAN SECURE CORES FROM THE SIDE WALLS OF A HOLE!

IT is now simple, safe and economical to take actual cores from the side-wall formation, at any depth in a previously drilled hole, with the Baker Rotary Wall Sampler.

You are enabled with this new tool to secure positive information regarding all characteristics of formations from which cores were not previously obtained. You can positively check findings of other correlating methods or devices.

The BAKER *Hydraulic* WALL SAMPLER

The strong, safe body is identical in every part with the well known Baker Rotary Hydraulic Expansion Wall Scraper. But instead of the Wall Scraper Blades the Baker Wall Sampler Blades are used, each blade being provided with two core-taking tubes, thus making it possible to secure four cores at one operation, at any point in the hole.

CONSTRUCTION AND OPERATION

The design of the chrome-molybdenum Wall Sampler Blades and the tungsten-chrome-vanadium Core-Taking Tubes is shown by the illustrations.

After the Baker Wall Sampler is lowered on drill pipe to the desired depth, pump pressure is applied to the enclosed piston which is forced downward, thus expanding the blades against the formation. The string is then lowered slightly which causes the tubes to cut cores from the side-walls. When the string is raised, the blades (with cores intact) drop safely within the Wall Sampler body, and the assembly is removed from the hole.

Just about as simple as it sounds, the Baker Wall Sampler makes it possible for you to know the exact nature of the formation at any depth.

Here's good news for every owner of a Baker Wall Scraper! You need only a set of Wall Sampler Blades to take advantage of this amazing new method of side-wall coring!

In holes from 4¾" to 12¼" core sizes range from 7/16" to 11/16" in diameter and from 1¼" to 2½" in length. Cores are usually secured in all four tubes and all easily removed for examination.

An unretouched photograph. Cores were easily taken and easily removed.

The Baker Wall Sampler has been field tested in various fields.

GET ALL DETAILS FREE!

Tell me more!

☐ Have your representative call.

☐ Send me illustrated Bulletin.

Name_____

Position_____

Company_____

Street or Box No._____

City_____ State_____

MAIL THIS NOW

BAKER OIL TOOLS, INC.

POST OFFICE BOX 609, HUNTINGTON PARK, CALIFORNIA

COALINGA • TAFT • HOUSTON

OKLAHOMA CITY • TULSA • NEW YORK

PUT *Reliability* FIRST!

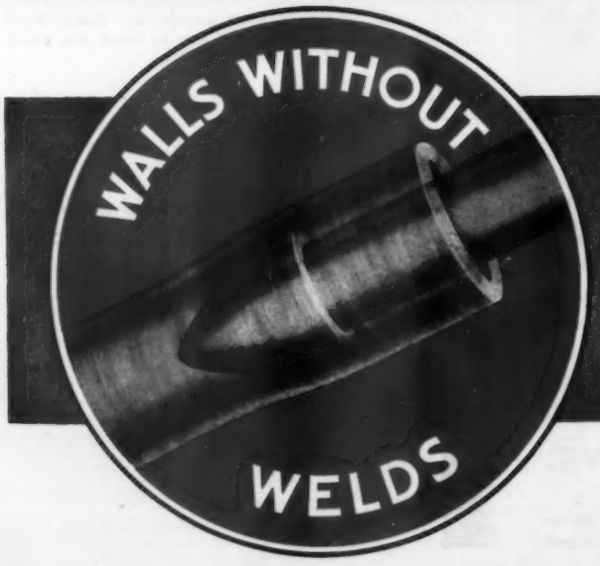
-in the selection of your casing

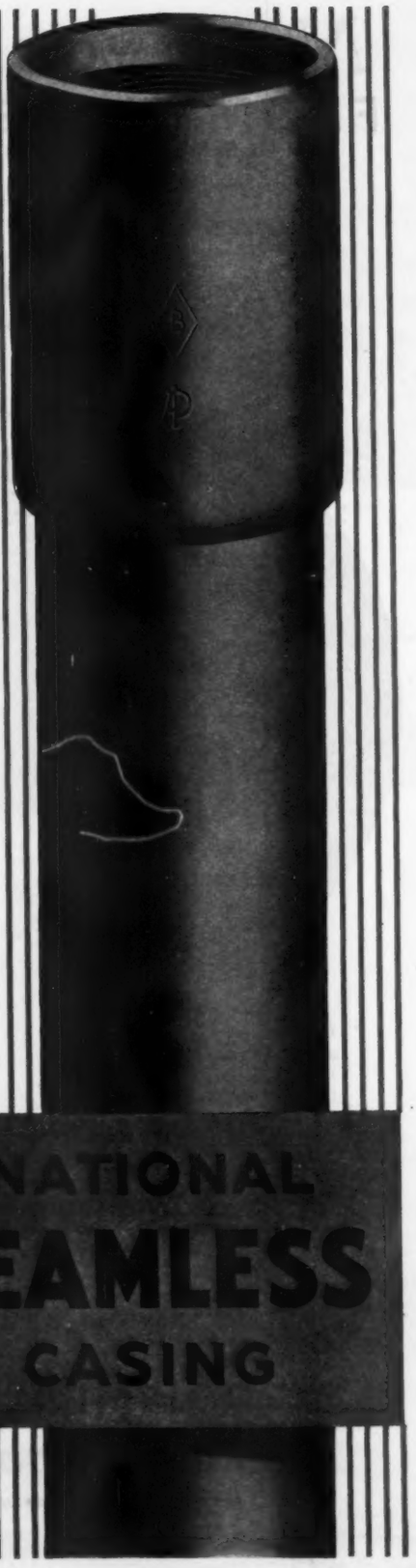
The real test of casing quality does not come in the first year of operating a well. It's when leaks from opening welds occur—permitting the intrusion of water, that troubles begin to pile up. The accumulation of extra cost quickly outweighs the apparent saving effected by the use of cheaper material. There's no doubt about it—reliability comes first in the selection of casing. That's why NATIONAL Seamless A.P.I. Diamond BX and B8 Casing remains as the standard in America's oil fields. Leading operators feel safer with a material that has proved its ability to stand the pace. They know that NATIONAL Seamless Casing has been tried and tested under every known service condition in every field. They know the value of seamless—no welds to split underground—uncertainty eliminated; and they rely on its uniformity of tensile strength, resistance to collapse, trueness of threads, and freedom from joint troubles. If you want reliability, proved through years of service—play safe and specify NATIONAL—*America's Preferred Casing.*

NATIONAL TUBE COMPANY • Pittsburgh, Pa.

Export Distributors—UNITED STATES STEEL PRODUCTS CO., New York, N. Y.

United States Steel Corporation Subsidiary





NATIONAL SEAMLESS CASING

SERVICE ON NEW FIELDS

FITTS AND OTHER FIELDS, PONTOTOC COUNTY, OKLAHOMA

Compiled by The Oil and Gas Journal, February 21, 1935

LOCATION OF FIELD

Approved names of fields.

In the region adjacent to Ada, in Pontotoc County, Oklahoma, there are the following oil and gas fields:

Official name—	Township	Range	Discovered
East Ada District	3–4n	7e	1909(*)
Allen	5n	7–8e	1913
Beebe	5n	4–5e	1927
Conservation	5n	6e	1932
Fitts	2n	6–7e	1934
Francis	5n	7e	1916
West Francis	5n	6e	1916
Jesse	1n	7e	1934
Steedman	4n	8e	1927
North Steedman	4n	7e	1928

Principal cities and towns.

Ada, the county seat of Pontotoc County, is located in Township 4n, Range 6e, on the south side of the Canadian River and about 135 miles southwest of Tulsa, 95 miles southeast of Oklahoma City and 175 miles north of Dallas, Tex. Ardmore is 65 miles to the southwest, McAlester 65 miles northeast, Shawnee 50 miles northeast and Durant 75 miles south.

Cities and towns where supply houses have branches.

Since the opening of the Fitts Field about 12 miles south of Ada, that city has become a supply store center with new branch stores and warehouses opening up weekly. Representatives for every important company serving the petroleum industry are making calls upon operators in the area at frequent intervals and the lease play is also being centered largely in Ada.

Some of the companies now having warehouses and stocks in Ada are: Atlas Supply Co., Baroid Sales Co., Black, Sivalls & Bryson, Inc., Bradford Supply Co., Bridgeport Machine & Supply Co., Continental Supply Co., Drane Tank Co., Eureka Tool Co., Frick-Reid Supply Corp., Henderson Machine Works, Hughes Tool Co., International Supply Co., Iverson Tool Co., Lucey Products Corp., Geo. S. Mepham Corp. (Colox), National Supply Co., Oklahoma Pipe & Steel Co., Oil Well Supply Co., Parkersburg Rig & Reel Co., Reed Roller Bit Co., Republic Supply Co., Taubman Supply Co. and Worthington of Oklahoma, Chicago Pneumatic Tool Welders Supply Co., Carson Machine Co., National Tank Co., Hinderliter Tool Co., Singer Pipe & Supply Co., Lee C. Moore & Co., Inc.

Railroads serving area.

Ada is located at the intersection of the main line of the St. Louis & San Francisco Railway (Frisco system), running from Tulsa to Fort Worth and Dallas, Tex.; the Oklahoma City, Ada & Atoka Railroad, part of the Midland Valley system, and the Ada-Pauls Valley branch of the Santa Fe system. This network of railroads permits direct shipments from all points north, east and south, and carload shipments are being delivered at Ada in from four to five days from points as far east as Pittsburgh, Pa. When the car reaches Ada it may be spotted at any point upon any line within the city limits or adjacent area through a reciprocal switching service.

Highway systems.

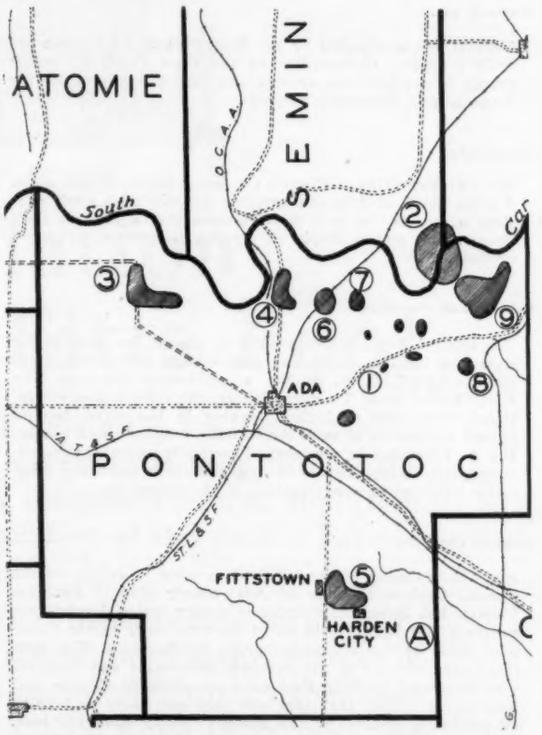
State highway No. 48, a paved north and south road, is the principal thoroughfare for automobile traffic to this area. This road passes through Ada and makes direct connections with the principal highways crossing through the state in all directions. Highway No. 19 is a part of the New Orleans-Seattle highway system which is now being completed through federal aid. Route No. 12 is a cross state road from north to south, and a recently graveled new road from Ada to the northwest serves the Beebe Field and connects with Routes 59 and 18 a little south of the town of Asher in Pottawatomie County. It is possible to drive to Tulsa, Oklahoma City or Dallas on paved or surfaced highways. Bus services to all points is available.

Aerial service.

A modern municipal airport has been established near Ada and many companies and individuals are taking advantages of these facilities. The air time from the principal cities of the region to Ada is less than an hour.

Type of country.

The city of Ada is located about 8 miles south of the Canadian River and on the north side of the watershed of the Arbuckle Mountains. The land is rolling but with enough level ground to afford soil conservation and permit farming. Cotton, corn and the usual type of crops are raised in this farm area. The land is wooded in places where the trees have not been cut away. Natural resources abound, and



Sketch map showing geography of the Ada, Pontotoc County, Oklahoma region. (1)—East Ada district; (2)—Allen; (3)—Beebe; (4)—Conservation; (5)—Fitts; (6)—West Francis; (7)—Francis; (8)—Steedman; (9)—North Steedman

there is an abundance of sandstone for building purposes, limestone and shales for cement making, glass sand at the outcrop of the "Wilcox" at Roff, south of Ada, potter's clay, moulding sand, brick shales, tile clay, asphalt and many other natural resources, including, of course, gas and oil.

Hotel and other accommodations.

There are several modern hotels in Ada, supplemented by many rooming houses and homes converted to take care of transients or people moving into the district and needing apartments. All rent houses are occupied but oil field homes are being built to accommodate workmen and their families, and Fittstown and Harden City have been located adjacent to the Fitts Pool and are oil field towns of usual "boom" type. While the weather gets cold during the winter months, it is not severe, and families are being accommodated temporarily and new houses are planned as rapidly as funds are made available for their erection. It is reported that 200 or 300 new homes will be built in Ada as rapidly as possible to accommodate the permanent residents who are now moving in to take care of the business created by this oil activity.

(Continued on Next Page)

SERVICE ON NEW FIELDS

Fitts and Other Fields, Pontotoc County, Oklahoma

(Continued from Preceding Page)

Domestic water supply.

The town of Ada is furnished with spring water from Byrds Mill Springs, located about 14 miles southeast of Ada and about 3 miles from the Fitts Field. The capacity of these springs is estimated at from 7,000,000 to 20,000,000 gallons per day. Byrds Mill Creek flows through the Fitts Field and water from it is used for drilling purposes. About 4,000,000 gallons of water from the springs is delivered to the city of Ada through conduits. The springs are covered and water from them delivered to Ada is not exposed to daylight until drawn from the tap. This water system is first class in every respect and the water is delivered to Ada by gravity flow.

Natural gas.

Natural gas is supplied by the Southwest Gas Co. from gas wells in Allen, Holdenville and the Fitts Field. An ample supply is available for present and future requirements for domestic and industrial purposes.

Electricity.

The Oklahoma Gas & Electric Co. has a power station about 6 miles north of Ada and supplies the city with electricity. This service is tied into the Oklahoma Gas & Electric Co.'s system, and ample supply of current is assured under all conditions.

Schools and churches.

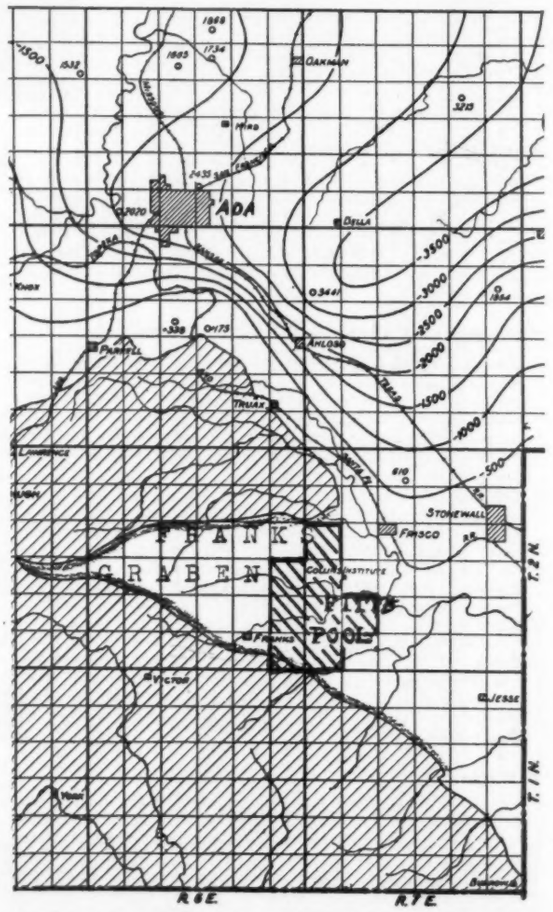
The city of Ada's school system is one of the best in the state and includes grade and high schools under the supervision of Prof. B. R. Stubbs, a well-known educator. The East Central State Teachers College, the third largest educational institution of higher learning in the state, has an annual attendance of more than 3,000 young men and women. Dr. A. Linscheid is president. Practically every church denomination is represented in Ada and there are many large edifices erected by congregations of the community.

General remarks.

Since the opening of the oil field in what is known as the Franks Graben, the city of Ada, county seat of Pontotoc County, has become the center of a very active development program that is taking in all of the area south of the Canadian River in the southeastern part of Oklahoma. This area lies in the vicinity of the Arbuckle Mountains and until oil was discovered in Fitts Pool most oil company officials had held to the theory that this area was not likely to become oil producing because of the general conditions of the sedimentaries found on the flanks of the Arbuckle Mountains. The area is badly faulted and under usual conditions this is assumed to create conditions unfavorable for the accumulation of oil and gas. Since the oil has actually been developed both company and independent operators have been all over southeastern Oklahoma and the lease play is most active with numerous wildcats under way or planned. Ada is the center of this activity and it is estimated that the present population is about 16,000 persons, an increase of 2,000 to 3,000 inhabitants since the summer of 1934. There are several other oil and gas fields in Pontotoc County adjacent to Ada, but in addition to that source of income the people in this region indulge in manufacturing of many products, dairying, stockraising and farming. The Oklahoma Portland Cement Co., one of the largest plants of its kind west of the Mississippi River, is located close to Ada and secures raw material from outcrops in the immediate vicinity. At Roff, about 12 miles southwest of Ada, there is a massive outcrop of fine quartz sand used in the making of glass. This sand has been classified as "Wilcox" and of the same character as the formation of that name bearing oil and gas in many fields in Oklahoma. There is a large glass factory in Ada. The region also supports local factories manufacturing candy, garments, ice cream and butter, machine shops, garages, foundry and many other industries. The Ada Chamber of Commerce has about 300 members; S. C. Boswell is president, and Milton Keating secretary. Other organizations, such as Professional Women, American Legion, Society of Lions, Rotary Club and Kiwanis Club, have branches in Ada.

GEOLOGICAL DATA

Southeastern Oklahoma has long been discussed by geologists but the oil industry has not considered it as a region that would be productive of oil and gas excepting in the valley of the Canadian River because the sedimentaries of Pennsylvanian



Structure map of Pontotoc County by Frank C. Greene. Oklahoma geological survey cross hatched area represents outcrop of Woodford and older formations. Contour Intervals—500 ft. Datum—top of Viola limestone

and older ages were badly broken by faulting and earth movements in this region of the Arbuckle Mountains.

It was known that Pennsylvanian, Ordovician and formations of other geological periods that had been oil producing in other areas existed on the flanks of the Arbuckle Mountains and over the Hunton Arch.

In Oklahoma Geological Survey Bulletin No. 40 R. A. Conkling covers the general geology of Pontotoc County and makes special acknowledgment to George D. Morgan, author of Bulletin 2, Bureau of Geology for Oklahoma, Norman, Okla. J. A. Taff, U. S. Geological Survey, has also prepared several professional papers on the area, and Dr. Charles E. Decker, University of Oklahoma, Norman, Okla., prepared Bulletin 55, Oklahoma Geological Survey, on the geology of the Simpson formations that deals with this region in much detail.

Since the Fitts Field has been opened there has been much discussion among geologists and paleontologists concerning the exact classification of the producing formations of this pool,

(Continued on Page 49)

"The Oil Bank of America"

An Appreciation of the Fitts Pool

WITH many customers listed among the Oil Operators in the Fitts Pool and among the banks in that district, the National Bank of Tulsa is vitally interested in this important new producing area, and is appreciative of the part it has enjoyed in this important development.

Oil Operators in the Fitts Pool and bankers here, as throughout the Mid-Continent Field, find the facilities and resources of this bank adequate to meet their needs; the broad experience and intimate understanding of its Officers and Directors helpful in the solution of their problems.

The financial requirements of Mid-Continent operators and bankers receive prompt, intelligent and careful consideration from the National Bank of Tulsa.

NATIONAL BANK OF TULSA

TULSA OKLA.

E. I. HANLON, *Chairman* A. E. BRADSHAW, *President*

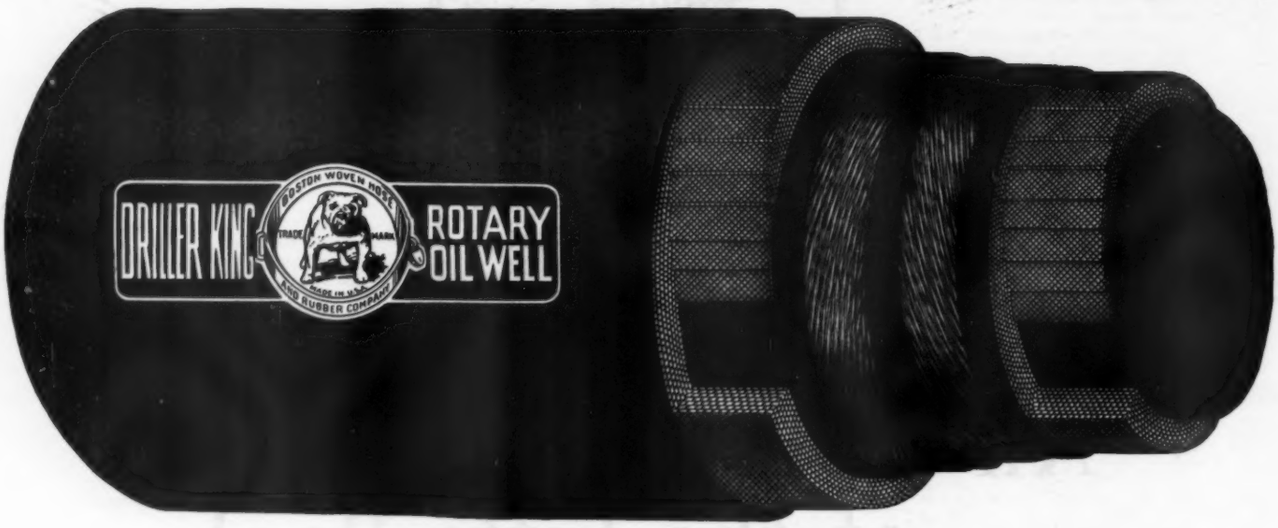
Capital and Surplus $8,000,000 . . . . . Resources Exceed $45,000,000

MEMBER FEDERAL RESERVE SYSTEM

F.H.A. APPROVED MORTGAGEE

THE OIL BANK OF AMERICA

B. W. H.
ROTARY OIL HOSE



TEST PRESSURE: 6,000 LBS.

TEST PRESSURE: 4,000 LBS.

● **The construction of Driller King and Bull Dog Rotary Oil Well Hose is an engineering job. Note how the entire structure of duck, rubber and steel wire is mathematically calculated and scientifically coordinated. Our specialization in Oil Field Mechanical Rubber Goods has developed products of proved quality which are sold through leading distributors in every field.**

BOSTON WOVEN HOSE & RUBBER CO.

Makers of quality Rubber Goods for more than 50 years

Works: Cambridge, Mass., U. S. A. Postal Address: Box 107, Boston, Mass., U.S.A.

SERVICE ON NEW FIELDS

Fitts and Other Fields, Pontotoc County, Oklahoma

(Continued from Page 46)

and also concerning the type and system of faulting that has taken place.

The topography of the county is described in Conkling's paper in Bulletin 40 as follows:

"Most of the county lies within the Sandstone Hills region. The extreme southern part lies within the Arbuckle Mountain region. The topography of the northern part of the county is the result of weathering of alternating sandstones and shales that have rather low dips. More or less parallel escarpments follow each other at great distances, which have been dissected by streams, giving to the whole surface a broken appearance. Most of the northern part of the county is wooded. Farther south limestones predominate, and flat or rolling prairie is the type of topography.

"Canadian River forms the north boundary of the county, and together with its tributaries drains approximately the northern half; Blue River and Boggy Creek drain the southern half of the county.

"The elevation of the surface in Pontotoc County ranges from 645 to 1,300 feet. The lowest elevation is found where Clear Boggy Creek crosses the eastern line of the county, in Section 25-2n-7e, and this point is about 4 miles east of the Fitts Field. The highest elevation is found near the northeast corner of Section 18-2n-4e, about 1½ miles north of Dolberg, or about 18 miles due west of the Fitts Field.

General and Historical Geology

"The strata exposed in Pontotoc County range in age from upper Cambrian to recent. However, there are many gaps, due to either unconformities or faulting, so that the entire section is incomplete at the surface.

"Because of rapid variation of the formations both along the outcrops and beneath the surface and the absence of many at the surface, it is difficult to give any estimate of the average thickness of any of the formations or the total thickness of all the formations at any given place over the county.

"At the southeast corner of Pontotoc County, where the Arbuckle limestone outcrops, there is less than 4,000 feet of sedimentary strata, while in the eastern edge of the county there is probably 10,000 to 15,000 feet of these formations. These formations are also quite thin near the town of Center, where an anticline is imposed upon a northwest plunging subsurface high.

"The sediments in general become very elastic toward the top of the section and also they become coarser toward the Arbuckle Mountains. The formations below the top of the Hunton Terrane are dominantly limestone while the succeeding Woodford and Caney formations are largely composed of black shale. The Wapanucka limestone, although shaly at the base, carries considerable limestone near the central portion, but from there the succeeding formations are largely shales, sandstones and conglomerates with very little limestone."

For a detailed description of regional structure and stratigraphy the reader is referred to Bulletin 2 or Bulletin 55, or to the quotations from these bulletins in Mr. Conkling's paper in Bulletin 40, page 110, Vol. 3.

DEVELOPMENT

Discovery of the field.

The Fitts Pool in the Franks Graben was opened by the completion of W. A. Delaney and others' No. 2 Craddock, C NE NE NE Section 28-2-6, where oil was found in a broken sand at from 4,410-30 feet and in a solid sand at 4,430-48 feet, from which the well yielded 332 bbls. per day. Prior to this completion several tests had been drilled in this area and Edward H. Moore and others found 36-gravity oil in their No. 1 Wirick, SE SW Section 29-2-7. This well was completed in August, 1933, and in February, 1934, Manahan Drilling Co. and others found oil on the Wagner farm in Section 18-2-7 in a sand at 1,758-64 feet, with the well making an initial production of 250 bbls. per day.

Subsequent development.

With the completion of W. A. Delaney and others' No. 2 Craddock, in what was recognized as one phase of the Simpson formation, the play in this area started in earnest and Sections 18, 19, 29, 30 and 31-2n-7e and Sections 24, 25 and 26-6n-6e have been designated as the area of the Fitts Field and contains about 5,120 acres. All this acreage may not be productive, but because of the size of the wells completed this constitutes one of the major oil producing areas discovered in this country within the past year.

Future activity of the field.

It is estimated that about 400 wells will be drilled in the area now defined as the Fitts Pool, and this will leave 300 more to be drilled as 52 have been completed with 48 drilling.

DRILLING CONDITIONS

Drilling water.

There is an ample supply of good spring water flowing through the field in Spring and Mill Creeks that head on the west side of Franks Graben. There is also good water found at relatively shallow depths in this area.

Boiler fuel.

There is an ample supply of gas for boilers and gas engines that is obtained from gas wells within the field.

Drilling practice.

All wells have been drilled with standard heavy duty type rotary outfits with steam engines and steam-driven pumps. The holes are started with 17-inch diameter bits and 13⅜-inch casing set about 650 to 700 feet to shut off surface water and gas. This string of casing is cemented using about 800 sacks of cement. It has been the usual practice to drill 11-inch hole below the bottom of the surface string of casing when it is 13⅜-inch size. If a 12½-inch string has been set it is still possible to drill the 11-inch hole and it is carried to about 2,000 feet, if possible, and if the hole stands well it may be reduced at this depth to 8¾-inch diameter and carried on to the Viola at about 3,750 feet without casing. This practice permits the company to set a string of 9-inch casing when the gas sands have been penetrated at above 2,000 feet or to set a string of 7-inch casing in the Viola, depth about 3,750 feet. Some companies set a full string of 9-inch casing reclaimed from Oklahoma City wells drilling the 11-inch hole from beneath the surface string into the Viola lime. All holes have been drilled into the Viola lime and if good production was not found there some wells have been acidized. In many instances this has increased production from 250 to 400 bbls. per hour. If the Viola is not commercially productive the hole is drilled through this approximately 400-foot-thick section, and into the Simpson below it. The depth of penetration into the Simpson depends upon the productivity of the sand. It is known that no well in the productive part of the field has yet drilled entirely through the Simpson. To complete the well oil is being used to wash out the drilling mud because it has been found that water used to wash in the well puts too much pressure upon the formation which now has only about 1,850 pounds per square inch pressure, not high enough to freely clean the well of mud and water.

Completing well.

After drilling in, the well is tested for potential by open flow through the casing. It is then usual practice to run a string of 2½-inch tubing through which the well is produced at its allowable rate.

Power.

It is usual practice to use three 125-horsepower oil field boilers at each location. The boilers are fired with gas and many provided with superheaters.

Electric power.

Electric power for drilling is available but at present no electrically driven outfits are used in the Fitts Pool.

Derricks.

All drilling derricks are 122 feet high, some mounted upon concrete foundations, others upon wooden foundations that are moved from location to location, and other steel derricks are mounted on steel substructures.

(Continued on Next Page)

SERVICE ON NEW FIELDS

Fitts and Other Fields, Pontotoc County, Oklahoma

(Continued from Preceding Page)

Drilling mud.

The natural mud made from the formations penetrated in these wells is supplemented by the use of admixtures to give weight. Baroid and Colox are used and the average weight of mud is about 10½ pounds per gallon. Some trouble has been experienced with gas blowouts caused by light mud, or mud cut with air entrained in the drill stem or gas cut by drilling into high pressure, high volume gas sands unexpectedly.

Straight holes.

Many wells have been difficult to keep straight because of dip of formations encountered. All contracts provide that the deviation from vertical shall be less than 5 degrees and contractors make acid bottle tests frequently and plug back and straighten holes if they have departed from the vertical. Some contractors are using two or three laced joints of heavy drill pipe above the bit to assist in keeping the holes straight.

Casing.

In many holes a surface string of 13⅜-inch 48-pound casing is set in 17-inch hole; others set 12½-inch casing in 15½-inch holes at 650 to 700 feet to shut off surface formations carrying gas and water. These strings are cemented with about 800 sacks of cement. Reducing to 11-inch hole below the surface string is common practice and this size hole is carried to about 2,000 feet. In some holes a string of 9-inch casing is set at that depth. Other holes are reduced to 8¾-inch below 2,000 feet and that size hole drilled into the Viola at about 3,750 feet. If the string of 9-inch casing is not set at 2,000 feet it is usual practice to set a string of 7-inch casing in the Viola. Some wells drill the 11-inch hole into the Viola and set a string of 9-inch in anticipation of having ample space for future gas-air lift operations. A new type electric welded casing is being used in some of the Fitts Pool wells.

Cementing casing.

In some wells trouble has been experienced in placing cement behind both surface and inside strings of casing. This trouble has been explained in various ways, but it has been found that with a 13 to 13½-pound cement slurry placed with two Halliburton high-pressure units it is possible to secure returns from the annular space between casing and hole, even though in some instances the cement does not show up at surface. Caving holes in the shales may explain this difficulty in cementing in some instances, in others it may be that the formations passed through are very permeable and cement may enter these pore spaces in relatively large quantities. With more experience in drilling the cementing and mud problems are being solved and it is believed that future wells will be finished satisfactorily in every way.

Gas hazards and blowout preventers.

Because of blowouts in some of the early wells it is now general practice to use blowout preventers on the surface string. On some locations substructures are used with 8-foot cemented cellars giving opportunity to handle pipe and also protect the drillers against gas hazards in deep cellars.

Rig builders and contractors.

Drilling contractors familiar with Seminole and Oklahoma City practices are taking contracts to drill the wells in Fitts Pool. Rig builders familiar with steel derricks are also available. On some leases it is usual practice to take down the 122-foot drilling derricks after completing the well and prepare the site for short pumping derrick later if needed. As long as the wells will flow the short derrick is not being erected.

Drilling costs.

The present contract price for rotary drilled holes in Fitts Pool is $6 per foot, with fuel and water furnished to the drilling contractor. Holes are approximately 4,200 feet deep. To this must be added cost of casing, other equipment and accessories, bringing the total cost of the drilled hole to about $47,000.

Christmas tree and connections with oil and gas separator and lease storage tanks for producing well will add another $5,000, bringing the total for well to about $52,000.

PRODUCTION PRACTICE

Formation pressures.

All pressure readings have been corrected to minus 3,300 feet below sea level datum. Original pressures in the Viola and Simpson formations were about 1,870 pounds per square inch. Pressures taken in these formations in January were as low as 1,830 pounds.

Gas oil ratios.

Wells are flowing naturally from the Viola and Simpson formations with gas-oil ratios of from 475 to 500 feet per barrel.

Proration requirements.

All wells are tested through the inside string of casing for open flow potential and it is then usual practice to run 2½-inch tubing to flow the well into oil and gas separators. The wells are allowed to flow about 7½ per cent of their open flow potential in February.

Character of oil.

The Simpson oil has a gravity of 38 degrees A.P.I.

Separators and tankage.

The hookup for flowing the Fitts Pool wells is much the same as that used in Seminole. High-pressure oil and gas separators. Each well is provided with several bolted steel tanks, or with welded lease tanks, but in any event they are of the gas-tight type.

PIPE LINES

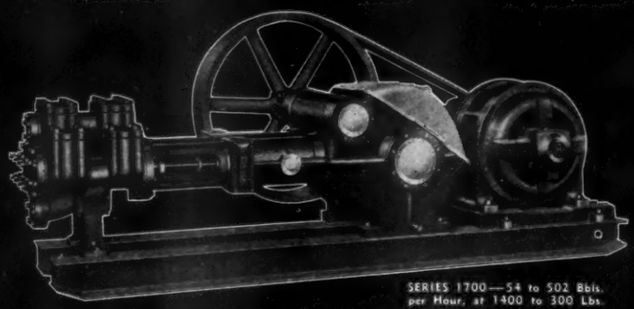
The Fitts Pool is served by a 4-inch line laid by the Oklahoma Pipe Line Co. but taken over later by the Stanolind Pipe Line Co. Oil is delivered through this line to Henry station, about 8 miles north of Ada, Okla.

Late last year a new line was laid from the pool to the Pauls Valley station on the main line of the Stanolind Pipe Line Co. This is 39 miles long and is 8-inch size, welded. The oil is gathered in the field by gravity system.

The Fitts Pool is also served by a 20-mile 8-inch line laid by the Oklahoma Pipe Line Co. from its station in Section 34-2-7e in the field to the Francis station, Section 32-5-7e, on the main trunk line of the Oklahoma Pipe Line Co. system. This line runs due north from the Fitts Field and is now supplemented by 3 miles of 8-inch and 1 mile of 6-inch gathering lines in the field. The pumps in the field station will be of the centrifugal type and driven by gas engines through gears. This is somewhat of an innovation.

Stanolind Pipe Line Co. pumping station, Fitts Pool

PUMPS DESIGNED STRICTLY FOR THE OIL INDUSTRY

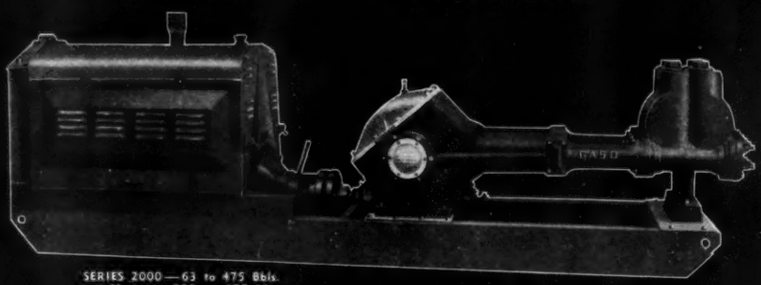


SERIES 1700—54 to 502 Bbls. per Hour, at 1400 to 300 Lbs.

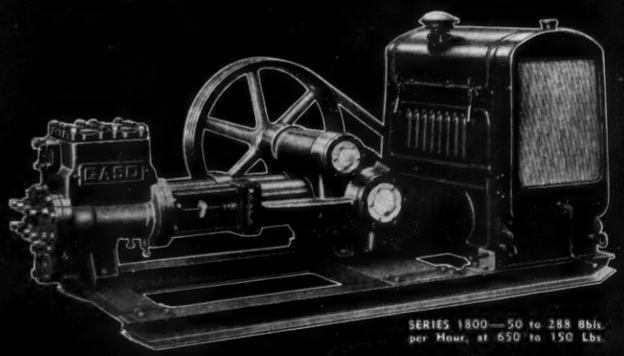
SERIES 1500—63 to 475 Bbls. per Hour, at 800 to 175 Lbs.

FIG. 601 — Walking Beam Pump, 30 to 55 Bbls. per Hour

FIG. 604 — For Gas or Vacuum, 26 to 28 Points Vacuum, 14" to 20" Cyl.



SERIES 2000—63 to 475 Bbls. per Hour, at 800 to 175 Lbs.



SERIES 1800—50 to 288 Bbls. per Hour, at 650 to 150 Lbs.

Every Gaso Pump measures up to strictly maintained standards of excellence.

And you'll find Gaso *service* prompt and reliable—matching Gaso Pumps in dependability.

GASO PUMP & BURNER MFG. COMPANY
Tulsa, Oklahoma
Export Office: 149 Broadway, New York

FIG. 201 — Rodline Pump, 31 to 41 Bbls per Hour

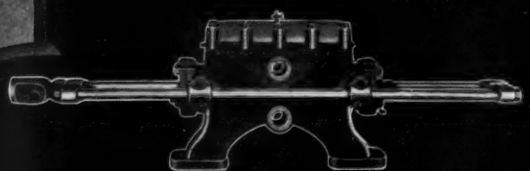


FIG. 301 — Jerker Pump, 32 to 157 Bbls. per Hour

GASO PUMPS

for every oil industry need

HINDERLITER

3-IN-1 CASINGHEAD HOOK-UP

In all fields where rigid control is required there are more Hinderliter Casing Head Hook-Ups than others. Not only in the Fitts-Ada oil field is the Hinderliter 3-in-1 Casing Head Hook-Up predominant, but in Hobbs, N. M.; West Texas; Panhandle; East Texas; Coastal Field; Kansas; Oklahoma and on Government Helium Gas Wells. Also, it is materially reducing costs, and providing safety factors absent in conventional devices, for oil producers and drilling contractors.

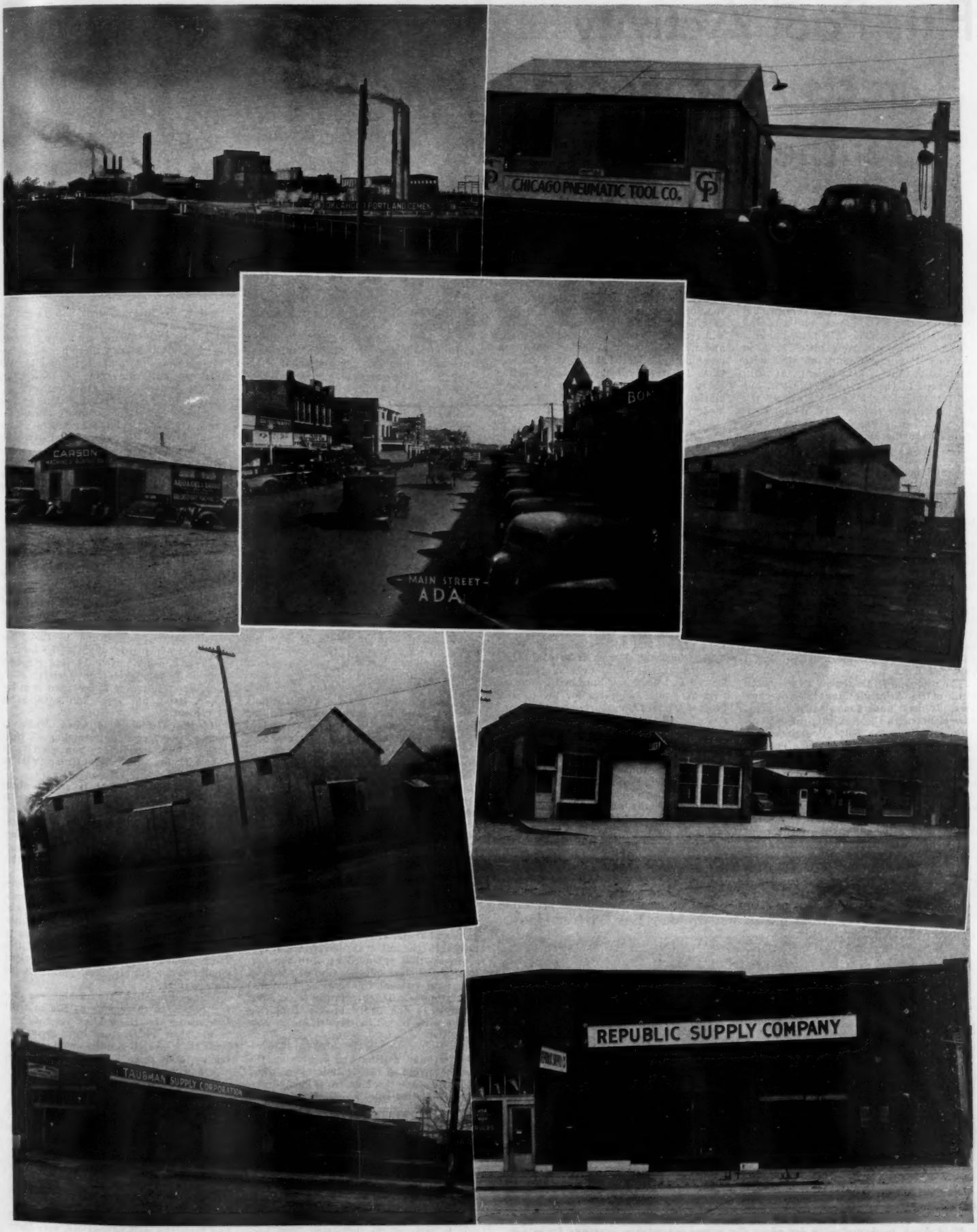
The Hinderliter 3-in-1 Casing Head Hook-Up is designed to permit the lowering or removing of well tubing or casing under high well pressures without the loss of well pressure or fluid.

This casing head hook-up is a departure from conventional design into which is built greater versatility than in any other oil field device. It can be used when coring and bringing in wells under pressure, fishing with rotary drill pipe, taking potentials and maintaining. No special fittings, equipment, or operators are necessary to installation, and the unit can be used in connection or combination with standard fittings, valves, and Christmas tree devices.

For Sale at Supply Stores

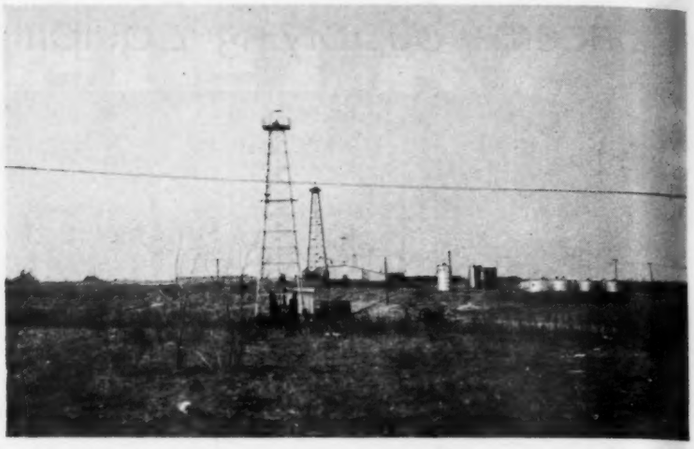
HINDERLITER TOOL COMPANY 1150 No. Peoria TULSA, OKLAHOMA

Concerns Supplying Equipment and Material in Fitts Area



Fitts Pool Activity Directs Attention to Southeast Oklahoma

By L. G. E. BIGNELL
Petroleum Engineering Editor



Beebe oil field, township 4n-4-5e, Pontotoc County, Okla., about 12 miles Northwest of Ada

For many years the oil industry debated the probabilities of oil being found in southeastern Oklahoma south of the Canadian River. The Allen Pool and a few smaller pools were discovered in northern Pontotoc County on the south side of the Canadian and the great Seminole area to the north of the river, but until the new field now known as the Fitts Pool was opened in 1934 no commercial oil was found along the flanks of the Arbuckle Mountains.

Tht Fitts Pool was opened by the discovery of oil in the Hunton lime formation and became really active when the larger wells were developed in the Viola and Simpson formations of Ordovician age. The development of this production, found from 3,750 to 4,200 feet, has resulted in an area comprising 5,120 acres being designated as the Fitts Pool and this is now the most active drilling spot in the Mid-Continent region, if not in the whole country.

The wells opened in the Simpson formation have potentials of from 2,000 to 5,000 and more barrels daily. The gravity of the oil is about 40 degrees, and the field now has a potential of 120,000 bbls. daily with an allowable of 9,000 bbls. per day.

The geology of this region on the north flank of the Arbuckle Mountains is complex. It has undergone many orogenic movements with the resulting unconformities and since the Fitts Pool has been opened the operators there have encountered many new problems in drilling and it is anticipated that production problems will also be different from those of wells in reservoirs that have not been subjected to great earth movements.

While the first well to discover oil was drilled with cable tools subsequent tests and wells were drilled with rotary outfits. Because of lack of knowledge of the character of the formations to be penetrated there has been several gas blowouts from formations encountered within the upper 650 feet. Seven twin locations are shown on the field map and four of them are offsets. This can probably be explained by the assumption that when J. E. Crosbie's well blew in wild and was later brought under control the escaping gas charged the upper sands and when the three offset wells were drilled the tools hit this high pressure gas formation without provision having been made to control the gas.

Upper Hole Problems

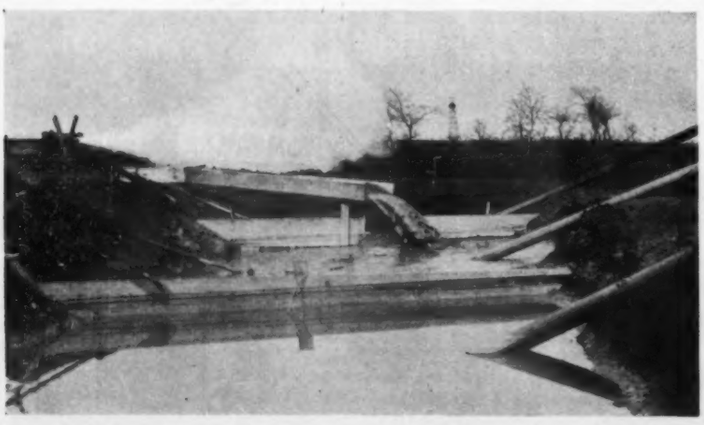
When the drilling became active in the Fitts Pool many rigs were moved in from the Seminole and Oklahoma City Fields. They are of the heavy rotary type equipped with high pressure slush pumps and usually powered with three 125-horsepower, 275-pound pressure steam boilers, many provided with superheaters. The derricks used in drilling are 122 feet high, of the steel type, and some are mounted upon concrete piers, others upon wooden foundations that permits of moving the derricks and foundations to new drilling locations after the wells are completed.

The latest type rig construction consists of a 7-foot high steel substructure upon which the derrick is erected. This substructure is built over a cellar at least 8 feet deep and lined with concrete. Cement floors and piers for the foundation of the substructure are also used and the whole plan is followed to provide means for controlling gas and preventing blowouts.

The usual hole is started with 17-inch bit, although some have used 15½-inch bits. In the 17-inch hole it is usual practice to set 13⅜-inch surface string of casing usually about 650 to 700 feet deep. In the 15½-inch holes 12½-inch casing is used.

In drilling these surface holes water has been encountered, also gas, and it has been necessary to use every precaution to prevent the water or gas from getting out of control. It is usual practice to use about 10½-pound per gallon natural rotary mud. This weight mud will exert a pressure of about 54.5 pounds for each 100 feet of height of column. For a 650-foot depth of hole this pressure exerted against the formation at the base of the hole amounts to 354.25 pounds per square inch and it is reported gas-bearing formations encountered at or above this depth have pressures of 650 pounds in some instances.

This high pressure at shallow depths may be accounted for by the recharging of upper sands with high pressure gas that has escaped from lower formations and flowed upward along the fault planes. It is reported that in the six known gas-bearing formations found between the surface and the 2,000-foot depth in this field rock pressures in each are almost identical. This further supports the theory of vertical migration of gas along fault planes and the equalization of pressures in all sands that have been cut by these faults.



Mud ditch equipped with jet pipes for removing coarse cuttings from pit

Straight Hole Drilling

By using ordinary care it has not been difficult to drill the upper holes straight. Their large size may have some advantage in keeping the hole straight. So aside from the blowouts that have been experienced in several wells the only other trouble has been loss of drilling fluid. It is reported that in several of these big holes mud circulation has been lost and in one instance it is reported mud was observed in a creek flowing close to the hole in which mud circulation had been lost. Using a special material in the mud the crevice was filled and circulation restored. This instance indicates a fault extending to the surface and passing through the formation penetrated by the hole.

On another location near the one upon which the mud escaped to the creek bottom it is reported the driller reported loss of mud before drilling had started. Mystified by this report the superintendent went to the location to investigate and found fresh mud that had been mixed in the pit was disappearing into a fissure that extended up into the bottom of the slush pit. A fibrous material was used to seal this crevice and mud loss stopped. This instance is another example of the badly faulted condition of the area in which the drilling is now being done.

After completing the hole to 650 to 700 feet and setting and cementing the surface string of casing it is usual practice to reduce the hole to 11-inch diameter. This size hole is drilled to at least 2,000 feet and in some instances is carried full size into the Viola formation encountered at about 3,750 feet deep.

In this 11-inch hole trouble has been experienced by the drill deviating from the vertical and it has been necessary in a number of instances to plug back and straighten the hole to meet requirements for straight hole drilling stipulated in the contract.

It is believed the deflection from vertical is due in many instances to the bit striking a formation that is dipping and following this angle of dip away from the vertical. It is known there has been subsurface faulting and it is possible the bits are following some of these fault planes, and deviating from vertical.

As the contracts provide that no hole can have a deviation of more than 5 degrees from vertical the contractors have been checking the hole frequently with acid bottles and other forms of straight-hole surveying instruments, and if it is found they have wandered from the straight and narrow path the hole is plugged and straightened at once.

Running Casing

After setting the string of surface casing the program for casing the balance of the hole varies. If the 11-inch diameter hole is drilled satisfactorily below the bottom of the surface string to a depth of from 2,000 to 2,400 feet and the walls of the hole stand all right some contractors will then reduce hole to 8¾ inches and continue to the Viola found at a depth of about 3,750 feet.

In this combination 11 and 8¾-inch hole some companies run a string of 7-inch diameter casing and cement it in the Viola, using not less than 2,000 sacks of cement.

If the 11-inch hole when drilled to about 2,000 feet is not standing all right it is general practice to run a string of 9-inch casing and cement it at 2,000 to 2,400 feet.

If the 9-inch string is set at about 2,000 feet a third string of casing is necessary and the hole below the 9-inch casing is reduced to 8¼-inch diameter and carried to the Viola formation. Either 7-inch or 6⅝-inch diameter casing is used for the flow string in this instance.

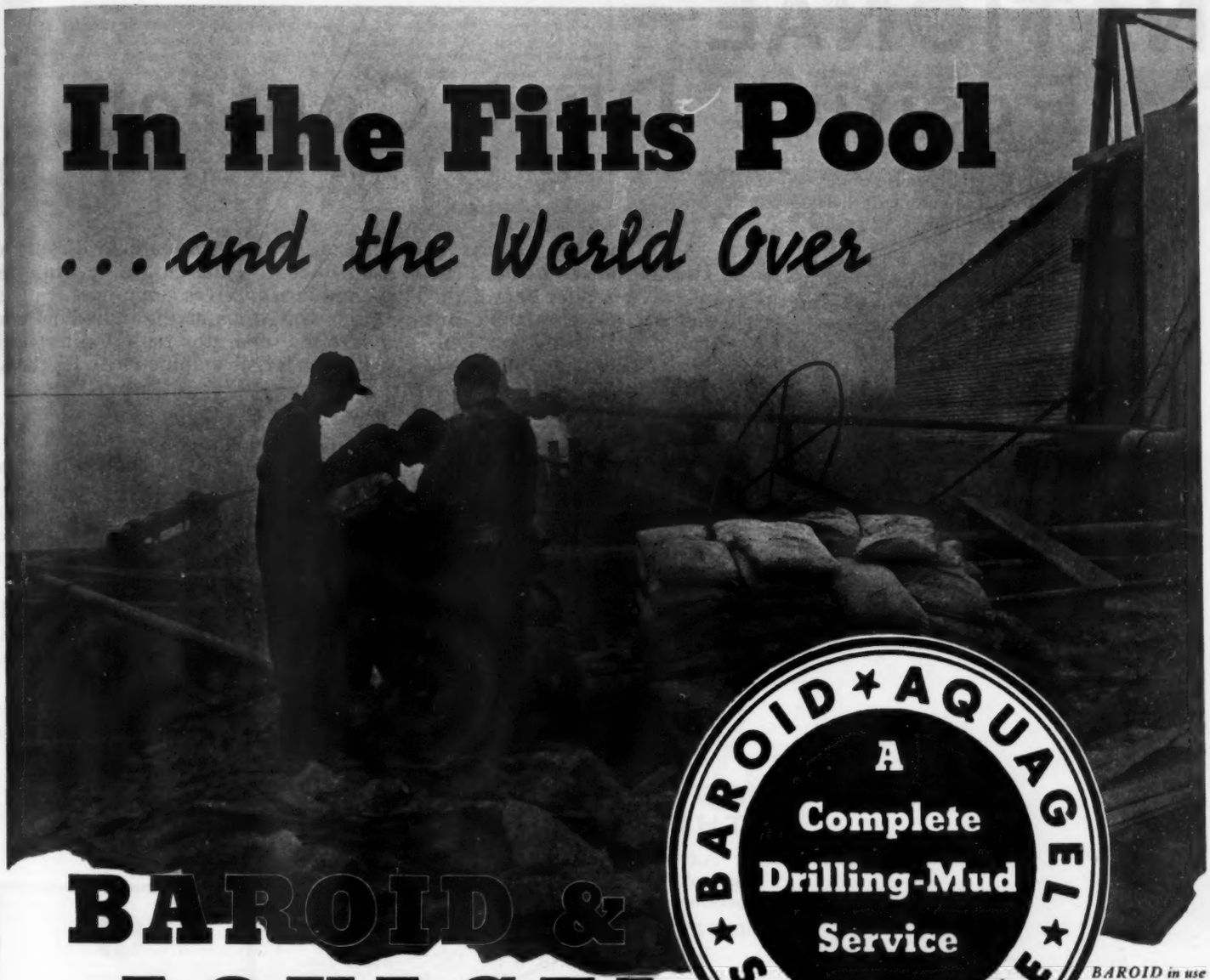
A third program is to drill the 11-inch hole into the Viola formation and run a full string of 9-inch casing. This size string is used by some companies anticipating that it is going to be necessary to produce these wells by gas-lift and this large casing affords a better working condition for running and pulling inside flow strings.

Many companies are tacking the casing collars to the casing as run into the hole, using electric welding for this purpose. Most contractors own their own portable generating units mounted upon trucks and some operating companies also have units of this type.

Mud Practice

At each well in the Fitts Pool it is usual practice to dig an auxiliary mud pit in addition to the usual type slush pits provided with baffle boards to reduce velocity so cuttings will be dropped from the mud in the first pit and only clean mud pass on to the second pit into which the suction pipe from the slush pumps extends.

Each slush pit receiving the mud direct from the well is provided with three



In the Fitts Pool

...and the World Over

BAROID ★ AQUAGEL ★ STABILITE

A Complete Drilling-Mud Service

BAROID in use in one of many wells, Fitts Pool, Ada, Oklahoma.

BAROID & AQUAGEL Provide SAFER, QUICKER DRILLING

IN THE FITTS POOL—blow-outs are being prevented and salt water confined to the formation with BAROID weighted drilling muds, which are NON-CORROSIVE.

Casing is being set with AQUAGEL cement because it does not flow into porous sand encountered, or lose water into the formation. It is easily circulated to the surface behind the casing.

Stocks carried and a complete drilling mud service available in all active oil fields.

BAROID PRODUCTS

BAROID . . . *Extra-Heavy Colloidal Drilling Mud*
AQUAGEL . . *Trouble-Proof Colloidal Drilling Mud*
STABILITE . *An Improved Chemical Mud Thinner*

BAROID SALES CO.

LOS ANGELES • HOUSTON

National Pigments & Chemical Co., St. Louis

NATIONAL—
Positive Dual Control
SEPARATOR

IT'S DUAL CONTROL because both the oil and gas valves are automatically controlled by one large float.

IT'S COMBINATION because the pilot-operated oil valve is used with an automatically controlled Gas Valve, by one large float.

IT'S SAFER because the gas valve is closed gradually and cannot apply more than safe pressure of the separator.

The National Positive Control is a new application of two controls. The full power of the float is used to control the gas valve while the oil valve is pilot operated. This combination gives some new features that are not obtainable in any other way, thus giving individual control over both valves. This provides the separator with greater flexibility of control, assisting in handling of larger volumes with less back-pressure than ordinarily required.

In operation it is a complete Dual Control Separator, but its operation is greatly different from the conventional dual oil and gas control. This difference is in the two separate types of controls on the two fluids. It has long been known that for better operation on most conditions it is better to have quick action of the oil valve, that is, quick opening and quick closing, as the oil level in the separator requires. The advantages of this type of operation are many and are fully set out in our catalog No. 18 and new pamphlet No. 88.

This new National possesses features that make it outstanding. It is absolutely above comparison with any other regular or dual control separator and the manufacturer believes that its adoption will be immediate and universal.

This new National is made in all the popular nominal sizes as other Nationals. Prices will be quoted on a size for any requirement necessary.

ASK THE COMPANIES THAT ARE USING THEM

Advantages proven by performance records on volumes handled at unusually low working pressures.

FITTS POOL

Hardin No. 2, No. 6 I.F. DC National Jan. 23, 1935. Thru casing and tubing. Two 4″ oil lines 600 feet long with 6 right angle bends. Handled 585 bbls. per hour at 30 pounds separator pressure.

Hardin No. 3, No. 6 I.F. DC National. Thru casing and tubing. Two 4″ lines, 5 right angle bends, 250 feet to tanks. Handled 478 bbls. per hour at 20 lbs. separator pressure.

Norris No. 2, No. 6 I.F. DC National. Thru casing and tubing. Two 4″ lines, 5 right angle bends, 625 feet to tanks. Handled 524 bbls. per hour at 27 lbs. separator pressure.

Cradduck No. 2, No. 2A I.F. National. Thru casing and tubing. 6⅝″ line, 6 right angle bends, 600 feet to tanks. Handled 915 bbls. per hour at 40 lbs. separator pressure.

Cradduck No. 3, No. 2A I.F. National. Thru casing and tubing. 6″ line, 5 right angle bends, 600 feet to tanks. Handled 1130 bbls. per hour at 56 lbs. separator pressure.

Cradduck No. 4, No. 2A I.F. National. Thru casing and tubing. 6″ line, 5 right angle bends, 400 feet to tanks. Handled 1120 bbls. per hour at 54 lbs. separator pressure.

WRITE FOR PAMPHLETS—

"Principles Involved in the Design and Construction of National Oil & Gas Separators."

"Discussion of Separators and Separator Controls and their Use."

Note These FITTS POOL Separator Performances At Left

Three Upper 4′ x 16½′ Dual Control

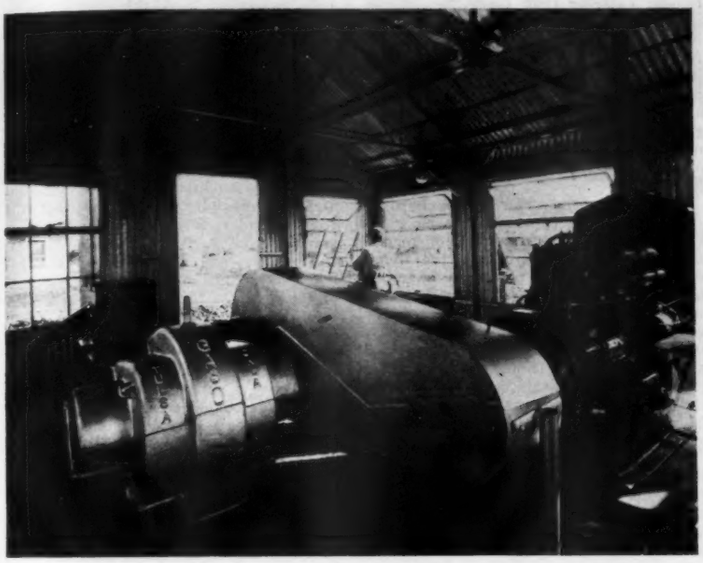
Three Lower 5′ x 16½′ Inside Float Regular

NATIONAL TANK CO., TULSA, OKLA.

National Supply Corporation, New York City—Foreign Distributors (Except Canada)

or more jet pipes. By using steam at the lower end of these jet pipes it is possible to remove heavy, coarse particles of cuttings that have settled to the bottom of this first pit and transfer these cuttings to the auxiliary pit.

This system of slush pits or the use of shaking screens indicates the contractors expect to be required to remove an appreciable quantity of coarse cuttings from the mud returns. There are some wells in the Fitts Pool provided with screens and these screens are working satisfactorily, eliminating the coarse cuttings which are piled on the ground away from the location, and the mud that passes through the screen is returned direct to the mud system. This screening system saves mud, also eliminates the need of a large auxiliary storage pit used with the jets described above.



Partial view interior Stanolind Pipe Line Co. station in Fitts Pool

The natural mud made in drilling the wells in the Fitts Pool is satisfactory except when strata are encountered that carry salt water or sediments that grind up and add inert materials to the mud fluid or change its "ph" value. The change in viscosity may be attributed to a high concentration of solids that are inert and do not make mud fluid; to the presence of sedimentary materials encountered in drilling that change the gel properties of the mud and cause this mud to carry cuttings through the circulting system instead of dropping these cuttings in the pits; and to the coatings of either solids, gases or liquid on the inert particles of the mud.

Chemical Treatment

To correct some of these conditions some operators have added 50 pounds of tannic acid and 10 pounds of caustic soda in 50 gallons of water to each batch of mud as discharged into the slush pit. A variation of the percentages of caustic soda and tannic acid in the mixture has failed to produce the desired results in some instances and as there was danger of using too much, as the tendency is to overtreat, the results would be that the mud was in worse conditions than before treatment.

This led to search for better chemical treatment and a number of solutions were tried in various combinations. Di-sodium phosphate combined with tannic acid and caustic soda was tried and gave better results than the original tannic acid-caustic soda compound.

Another chemical tried was gallic acid and that gave even better service. It may be used alone or in conjunction with di-sodium phosphate and caustic soda.

For mud admixtures to change weight Colox and Baroid have been used extensively and have both given excellent results. Both weighting materials have been used with and without Aquagel, but as most of the natural mud made from the formations found in the Fitts Pool have a tendency to become viscous the use of Aquagel with Baroid or Colox is not advisable.

Some of the formations penetrated in the holes in the Fitts Pool are used for cement making at the large cement plant south of Ada where these formations come to the surface. These shales have been known to have good mud properties, in fact, "Ada Mud" made from these shales was sold in considerable quantity

Reed Roller Bit Co. representatives in the Fitts Field. Left to right: J. E. Lafay, salesman; Lindsey Adams, service man; O. L. Thomas, salesman

BACK IN „ 1901

In the mid-summer of 1901 there was drilled in near Red Fork, not far from Tulsa, a little four-barrel oil well.

OIL BANKING WAS *New* IN TULSA

News of this discovery of oil put Oklahoma in the spot-light. Old timers tried their luck in every direction of the new well, but it was not until December, 1905, that Glenn Pool, Oklahoma's first large oil pool, was discovered. Tulsa became the center of activity in the great oil development that followed, and at the time Oklahoma was made a state, Glenn Pool was at the peak of its production.

Oil financing was new to Oklahoma banking in 1901, but The First National Bank even in those early days rendered a necessary service to individuals and companies interested in this *new* industry. While the amounts involved then are not to be compared with those of today, the financing problems were very much the same.

The Fitts Pool is in the spot-light now, and promises to develop into a very important field.

As in the early days of Oklahoma's oil development, we are always ready and willing to discuss financing problems with oil companies operating throughout the Mid-Continent Area. Officers of the bank are especially qualified to serve you, due to their years of active association with oil finance.

DIRECTORS

M. M. DOAN, *Oil Investments*
F. L. DUNN, *Executive Vice President*
A. L. FARMER, *Farmer and Duran, Investments*
H. N. GREIS, *Oil Producer*
JOHN D. MAYO, *Mayo's Incorporated*
R. OTIS McCLINTOCK, *President*
F. B. PARRIOTT, *Oil Investments*
WAITE PHILLIPS, *Investments*
W. G. SKELLY, *President, Skelly Oil Company*

THE FIRST NATIONAL BANK and TRUST COMPANY TULSA

THE OIL BANK OF TULSA

during the drilling activities in the Oklahoma City Pool.

The mud problems of Fitts Pool are not those of making a suitable fluid for drilling purposes but rather to prevent this mud from escaping into the formations and losing circulation.

Some probable reasons for loss of circulation in the Fitts Pool have been cited. One remedy applied to stop this loss of circulation has been the use of a new shredded fibrous material mixed with the mud that tends to ball up when it is forced into the cavities encountered in the hole and thus build up a layer of mud that will seal off the place into which the mud has been flowing.

This principle is a refinement of the old practice of dumping cotton seed hulls, manure, leaves, branches of trees or whatever is handy into the hole hoping it would form a bridge across the face of the opening into which fluid flowed and seal it off.

It is a well-known fact that the old hit or miss practice of restoring lost circulation has worked in the majority of instances but because it was based upon trial and error the cost of repairing the hole has run into a lot of money in many instances and this is not pleasing to either drilling contractor or company.

The companies developing this new material for mixing with mud are working upon the theory that a special size and type of material can be made available for each kind of a job. If the flow away from the hole is rapid and indicates a large cavity the material added to the mud to plug off such a space will be coarse. If, on the other hand, conditions indicate the pore space is small a finer fiber will be used, but in either instance the principle back of the method is based upon use of selected material rather than trial and error operation.

The results so far secured in Fitts Pool are promising, but it is planned to carry on the experiments in both laboratory and field to definite conclusions and the results attained will be of much interest to the industry.

Cement Problems

The complementary problem to mud fluid practice is cementing the casing in the hole. In several holes it has been found cement was not returning to the surface in the annular space between casing and walls of the hole even though no report had been made of lost circulation of mud in drilling.

Two conditions may cause this non-appearance of cement at the surface—it may enter permeable formations or it may be the volume of the annular space between casing and hole is so large insufficient cement has been used.

If a thief formation opens up and takes the cement when high pump pressures are applied to force it back of the casing it is difficult to determine later. When the hole was drilled it is assumed thief formations penetrated would open and take mud and it could then be treated before drilling was resumed. Under such conditions it was further assumed a hole so treated will be impervious to cement entering thief formations.

However, there is a great difference between the pressure exerted against the formation by a column of mud and the pump pressure applied in driving cement upward back of the casing. It may be assumed this pump pressure is so much greater than mud column pressure that normally mud sealed formations will be opened and the cement slurry enter freely.

This assumption, however, is hard to verify and some operators are more inclined to believe the sluffing of formations penetrated has caused the diameter of the hole in places to be much larger than drill size. It is reported that in one sample of cuttings secured for geological examination it was found cavings were 14 times in volume in excess of material coming from the formation being drilled. If this is representative then it can safely be assumed large cavities are formed in the drilled hole by caving of formations.

When the cement does not appear at the surface some operators have resorted to the practice of pumping grout into the annular space between casing and hole from the surface forcing it down as far as possible. This practice is not recommended and it is impossible under such treatment to be certain whether cement has been placed back of the entire length of casing.

If there is open space back of the casing it is possible for one or more charged formations to be left exposed and gas might then migrate from one to the other. While the gas or water could not escape to the top or bottom of the hole because of the cement placed there it might do damage to the formation and adjacent wells.

Remedy Suggested

One method of checking hole as drilled has been outlined. As each formation is penetrated, or at regular intervals in the hole, it is proposed to fill the hole with mud, then shut in the surface string and apply pressure so the mud will be forced against the sides of the hole and if there are any open formations present the mud would enter. If this method is followed it would be possible to build up several hundred pounds pressure against each succeeding section of the hole as drilled and this would insure that the formations are sealed and later it is not probable cement under equal pressures would be forced into thief formations when the casing is being cemented.

In the event it is noted mud is escaping into a formation it is proposed to remove all mud from the hole and fill the hole with a specially prepared mud containing a shredded fibrous material and again apply pressure so that the treated mud is forced into the open formation.

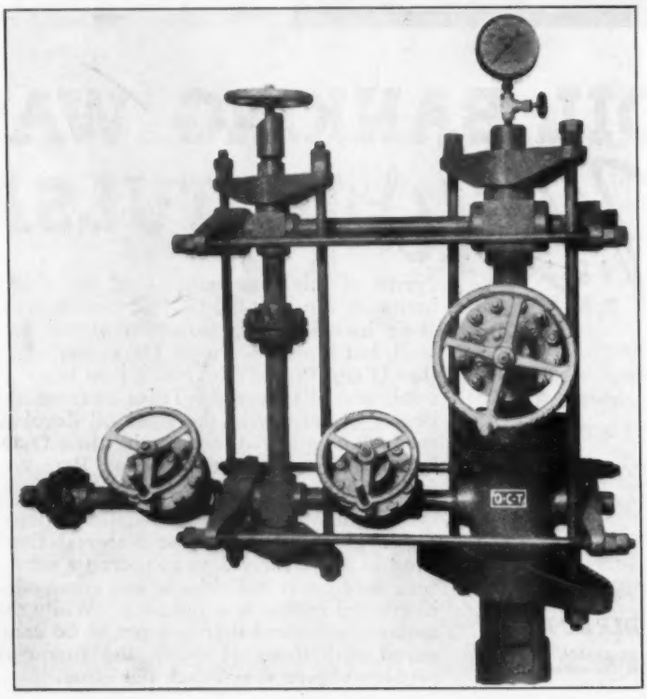
There is one other advantage that might be gained by this mud treatment of the hole. If the ordinary mud is lost into the formation when pressure is applied and the hole is then unloaded it would be possible to check the volume of the special mud put into the hole. This would give a gauge by which the volume of the hole could be estimated, and later when it is necessary to estimate the quantity of cement needed to fill space behind the casing this information would be of much advantage.

Producing Methods

While none of the wells in the Fitts Pool are yet on the pump or being produced by mechanical means it has been noted formation pressures have dropped rapidly. Up to February 1 the drop in formation pressure had been at the rate of 1 pound for each 21,000 bbls. of oil produced. The gas-oil ratio was about 475 to 500 feet per barrel of oil.

The original formation pressure corrected to —3,300 feet below sea level is reported as having been about 1,870 pounds per square inch. Recent potential tests have reported bottom hole pressures as low as 1,837 pounds, corrected.

At 4,200 feet depth a column of pure water would exert a pressure of about 1,818 pounds per square inch. This indicates that the present formation pressures in Fitts Pool are but little above those necessary to lift a column of 40



"TAILOR-MADE" FOR FITTS POOL

. . . and you can almost cover it with your overcoat!

This entire hook-up measures only 5′ high and 4½′ wide, and installation time, after tubing is landed, is less than 30 minutes.

It is completely assembled in our plant and tested to 3,000 pounds pressure, and is now operating throughout the Southwest on wells of 500 to 1,800-pound working pressures. FOR FITTS POOL we recommend this Christmas-tree to fit 8⅝″ O.D. or 7″ O.D. casing, 2½″ upset tubing, 4″ casing flow-line, 2½″ or 3″ tubing flow-line, using your choice make of gate valves. It will save you time and money.

Call C. J. "Jim" Hillman, O-C-T representative, at the Aldridge Hotel, Ada, Okla., or through any leading supply house in the Ada and Fittstown district.

Member American Petroleum Equipment Suppliers' Association.

OIL CENTER TOOL CO.

QUALITY O-C-T PRODUCTS

HOUSTON, TEXAS, U.S.A.

All O - C - T Equipment Sold Through Leading Supply Companies.

Magnolia Petroleum Co.'s Norris lease well hookup on flowing well

THE FRICK-REID STORE

H. L. WILKINS
District Sales Manager

•

DEPENDABLE PRODUCTS

AXELSON
Sucker Rods.
Working Barrels

BEAUMONT IRON WORKS CO.
Rotary and Pumping Equipment

BLAW-KNOX COMPANY
Gas Cleaners — Steel Grating — Tracyfiers

DONOVAN BOILER WORKS
Oil Country Boilers

JONES & LAUGHLIN STEEL CORP. — Tubular Goods

LINEAR PACKING AND RUBBER CO., INC.
Packing for all needs

NATIONAL TRANSIT PUMP AND MACHINE CO.
Steam Pumps - Compressors

PAUL J. RIBB
Local Store Manager

•

DEPENDABLE PRODUCTS

RAYBESTOS-MANHATTAN, INC.
Raybestos Rotary Brake Lining

JOSEPH REID GAS ENGINE CO.
Gas and Diesel Engines

REPUBLIC RUBBER CO.
Transmission and Conveyor Belting - Mechanical Rubber Goods

JOHN A. ROEBLING'S SONS CO.
Wire Lines - Welding Wire

WALWORTH COMPANY
Fittings - Valves

WHITLOCK CORDAGE CO.
Manila Drilling Cables - Bull Ropes - Cat Lines - Cordage

WM. J. WHATLEY
Field Salesman

ADA, OKLA.

SERVES THIS RAPIDLY GROWING AREA WITH A COMPLETE STOCK OF EQUIPMENT AND MATERIALS USED BY THE OIL AND GAS INDUSTRY

DEPENDABLE PRODUCTS

L. R. ROBERTS
Field Salesman

FRICK-REID SUPPLY CORPORATION

PITTSBURGH, PA. *TULSA, OKLA.*

gravity oil to the surface. This is also accentuated by the low gas-oil ratio of the product.

It is reported recently completed wells have found it necessary to wash in with crude oil instead of water because the weight of the combined mud and water column exerted too much pressure on the producing sands and the well would not deliver oil for some time after the mud had been washed out of the hole.

What method will be resorted to in producing these wells is still a matter of operator's decision. Some wells are being prepared for gas lift. Well head fittings very similar to those used on Seminole wells are being installed with elevated traps. The gas will be recycled and it is possible additional wells will be completed in the gas sands above the Viola for extra gas with which to operate the plants.

There is a similarity between formation pressures and gas-oil ratios in these two fields. It is therefore believed gas lift will be applied to Fitts wells this summer. There are extra compressors in some of the gas-lift plants in Seminole and these may be moved to Fitts Pool at relatively small expense. Also numerous fittings and surface pipe that can be reclaimed and used.

There are some operators in the Fitts Pool who do not have extra material available from Seminole or elsewhere. They may give consideration to regular pumping units for their wells. In Seminole Field it was found the effective life of the gas lift plants was limited. They paid for themselves but it was found necessary to convert to pumping plants when formation pressures dropped low and it may be that in Fitts Pool pumping units will be installed in the first place, especially as it is probable the well's allowable will be relatively low and the oil can be recovered by electric motor or gas engine driven units at low cost.

Construction scene in the Fitts Pool showing Oklahoma Pipe Line Co.'s line from field to Francis station

The use of drilling derricks over wells after they have been completed has been debated and some companies have already removed the heavy derricks from over the holes. Whether they will be replaced by shorter pumping derricks later is still to be decided. With portable cleanout units available it may be many wells will not be equipped with pumping derricks.

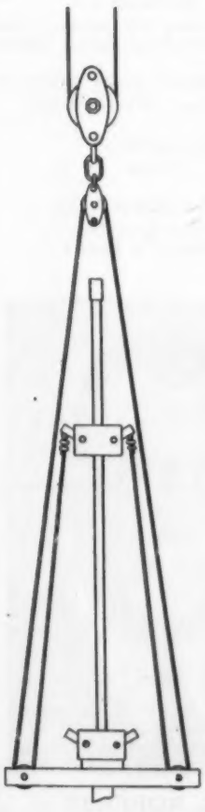
Field Gathering Lines

With the pipe line pumping stations located at low points adjacent to the Fitts Pool all gathering lines in the field are at present operated by gravity flow. It is probable this practice will continue.

One pipe line station is being fitted with gas engine driven centrifugal pumps, something new in station equipment, and their operation will be followed with interest.

General

While there are many new problems confronting the operators in Fitts Pool there is no reason to assume they cannot all be solved in a very satisfactory man-



Otis Patents

Number:

1,837,990
1,894,912
1,984,230

TUBING and PACKER INSTALLATIONS UNDER PRESSURE

•

•

THE SOUTHERN STATES COMPANY, INC.,

Tower Petroleum Bldg., Dallas, Tex.

Branch Offices . . . .

- Oklahoma City, Okla. . . Phone 4-9811
- Houston, Texas . Phone Wayside 8-333
- Midland, Texas . . . . . Phone 410

BRADEN STEEL CORPORATION TULSA OKLA TRADE MARK

Braden Steel Corporation invites you to compare, feature by feature, the Quality of Braden "Weather Proof" Sectional Steel Buildings with those of any steel building on the market. Such a comparison will prove why Braden Steel Corporation is the leading manufacturer of Sectional Steel buildings for all purposes.

Simplicity of design and construction, durability and attractiveness are features of Braden Standardized Sectional Steel Buildings, and are responsible for the fact that in the Fitts Oil Pool as in all other fields of the Mid-Continent Area, there are more Braden Sectional Steel Buildings.

BRADEN STEEL CORP.
TULSA, OKLAHOMA

ner. There is equipment available for every necessary operation.

It would be of advantage to the operators to use the electric coring method in all wells as drilled to carefully log the position of the various formations penetrated and record their porosity. This would make a permanent record so that later if it was desired to make repairs or open upper formations the work could be carried on successfully.

It is also possible the gun perforator can be used in placing cement behind sections of casing that has not been filled by the regular cementing practice. This could be done by shooting into the casing at regular intervals, then running tubing with packers inside of the casing and forcing fluid down this tubing into the lower perforated section and securing returns above the packer. When returns have been established cement could be pumped down the tubing and forced through the gun holes and the annular space up to the upper set of holes. This method of placing cement could be repeated until the entire annular space back of the casing is filled with cement.

In completing the wells in the Simpson formations where low pressures already exist it has been suggested pressure drilling methods might be profitably applied. The special type pressure drilling equipment could be moved into the derrick after the top of the Viola has been penetrated and the regular string of casing set.

By fitting the casinghead with fittings to regulate flow of fluid from the hole and connecting the casinghead with high pressure traps it would then be possible to drill in with clear water or with water cut with gas to half of its normal weight. Under this method the pressure differential could be maintained in favor of the formation and as the sand is penetrated it would be carried to the surface and discharged into the high pressure trap by the pressure released from the formation. This method is being applied very satisfactorily to deep wells in the Big Lake Field.

With at least 350 more wells to be drilled in the now proven area of the Fitts Pool on a spacing of one well to each 10 acres it is believed many new drilling and producing practices will be introduced. By the use of modern methods this field should yield better than 50,000 bbls. per acre or should add about 250,000,000 bbls. to the oil reserves of Oklahoma.

Hookup Carter Oil Co. for well flowing Richards No. 2 natural or with gas lift

RIG AND DERRICK LIGHTING

George A. Hill, Jr., chairman of the general committee of the Division of Production of the American Petroleum Institute, has appointed the following members to the correlating committee on rig and derrick lighting:

H. N. Blakeslee, American Petroleum Institute, Dallas, chairman; R. E. Donovan, Standard Oil Co. of California, San Francisco; E. S. Durward, Shell Petroleum Corp., Houston; W. H. Meier, Atlantic Oil Producing Co., Dallas (ex officio); B. A. Moeller, General Petroleum Corp. of California, Los Angeles; B. L. Moore, Humble Oil & Refining Co., Houston; George F. Prussing, Union Oil Co. of California, Los Angeles (ex officio); D. V. Stroop, American Petroleum Institute, New York (ex officio); and C. D. Watson, Carter Oil Co., Tulsa.

OPALITE

. . . the slick, easy flowing Arkansas mud

SAVES THE PUMPS

Made by nature and not by man . . . a natural mud that maintains its colloidal state . . . . drops the cuttings saving the pumps.

OTHER ADVANTAGES: Uniformly maintains its weight against gas mixtures . . . . builds strong wall against heaving shale or artesian water . . . . lubricates the bit perfectly.

SAVES PUMPS . . . SAVES MONEY . . . GETS THE HOLE DOWN SAFELY AND FASTER.

CORONA PRODUCTS, INC.
ROGERS, ARK.

THE INVESTMENT IN YOUR WELL

deserves this *PROTECTION*

The RECTOR Patented Head is the one bradenhead affording *all* these 6 features:

1. All packing is renewable under highest pressure.
2. Supports casing while providing against upward thrust.
3. Full-opening bottom flange, not reducing area.
4. Can get shut-off without putting men in the cellar.
5. Compactness of design requires less cellar space.
6. Pays for itself in time it saves. Let us tell you how.

Made in 6000, 3000 and 1500 pound test.

Representatives at: Houston, Pampa, Midland, Oklahoma City.

Export Office: L. C. Klein, 285 Madison Ave., N.Y.C.

RECTOR WELL EQUIPMENT CO. INC. RUGGED RELIABLE RECTOR RAPIDLY FORT WORTH, TEXAS U.S.A.

The facilities of the Oklahoma State Bank are designed to serve the Oil Industry and the Supply Companies in this area in an efficient and understanding manner.

Total Resources $1,500,000.00

OKLAHOMA STATE BANK
ADA, OKLAHOMA

94 NAILS

will protect

every slush pump in Fitts Pool

That's one nail per pump, two pumps per rig, on the 47 wells now drilling in this "hot spot."

Common nails cost 5c a pound, and one nail is your only loss when it is sheared to release pressure at the predetermined point. This valve positively cannot release any fluid until the nail shears, but when the nail does shear the valve is full—opening immediately, the piston moving within a split-second entirely out of the path of released fluid, thereby preventing any abrasion. To reset valve, merely insert a new nail.

Any crew member sets it quickly. A table on valve name plate carries nail sizes with relieving pressure of each size. A nail gauge, also on name plate, avoids any mistake as to nail size.

Widespread acceptance after continuous satisfactory performance in the field proves this valve is right!

Ask for pocket folder carrying full details.

Above is shown the high pressure valve for slush pumps. Its companion valve is the low pressure type for gathering pumps and similar service.

FLUID-PISTON SLUSH PUMPS
ABERCROMBIE PUMP CO.
GULF BLDG. HOUSTON TEX.

Fitts Pool Operators Considering Use of Mechanical Means for Producing Oil

By L. G. E. BIGNELL
Petroleum Engineering Editor

While it is still early in the life of the Fitts Pool to predict what form of mechanical production methods will be used to get this oil when natural flow ceases many operators are giving consideration to these problems. This is due to the relatively rapid drop of pressure in the producing formations that were noted when potential tests were taken early in February. The pressure drop since the field was opened up to that time has been approximately 1 pound for each 20,000 bbls. of crude oil recovered.

This drop may indicate an equalization of formation pressures and later the rate of drop may be slower. In any event the present differential in pressures is not great between that needed to lift a column of oil 4,200 feet vertically and discharge it into the oil and gas separators.

Wells recently completed have been washed in with crude oil instead of water because it has been noted that when water is used for this purpose it takes the well considerable time to clear itself of water that has been used in this process and start flowing oil.

Original formation pressures at —3,300 feet below sea level datum were about 1,870 pounds per square inch. Pressures taken in February were as low as 1,830 pounds in some wells and this does not leave much margin in favor of the formation. The field's potential with 33 wells producing was placed at 120,000 bbls. per day and the allowable at 9,000 bbls. daily or about 272 bbls. per well. As more wells are completed the individual well's allowable will be reduced proportionately.

There is a similarity between conditions in the Fitts Pool and the Seminole Field wells. In Seminole the wells were put on gas lift soon after completion, and in this way their rate of production was increased. It was found that the life of the gas lift stage of production was limited in the Seminole Field so that changes were made to pumping relatively early. The gas lift did pay for itself but some operators are of the opinion that they might have used the pumping equipment from the first and ultimately have secured about as much oil as they did get by the combined gas lift-pumping methods and have saved something by avoiding the expense of the gas lift plants.

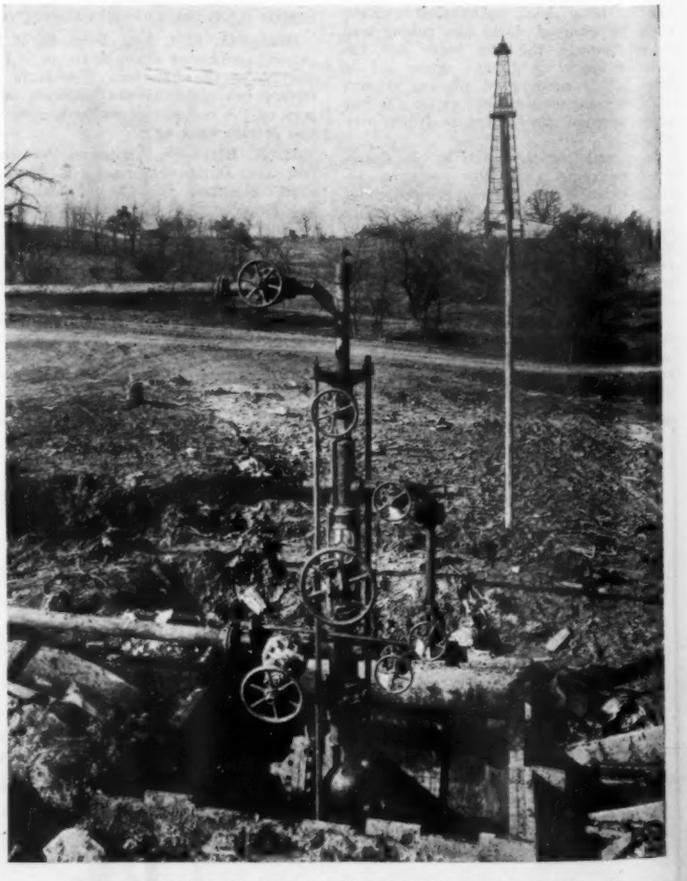
Pumping Practice

At present some operators in the Fitts Pool are fitting their wells so that they can be produced by either gas lift or pumping. As soon as completed and after the first potential test has been taken by open flow through the casing it is general practice to run a string of 2½-inch diameter tubing to near the bottom of the hole.

By so doing it is possible to conserve formation energy but the gas-oil ratio is not materially reduced by flowing through tubing for it is already low, being about 475 to 500 feet of gas per barrel of oil. By producing the wells through tubing this gas energy will be better conserved and the flowing life of the well extended.

When it is found that the wells will not flow naturally it will be possible to erect a rig front and pump them or a pumping unit can be set at the well and used to produce it. There are many types of pumping units available for this purpose and they can be powered by electric motors or gas engines, as either form of energy is available in this field.

It now seems probable that any type



Stanolind Oil & Gas Co.'s well hookup on a Fitts Pool well

THE FIRST NATIONAL BANK

Invites Oil Industry accounts. - - - If your operations in this area require an efficient and understanding banking service, we stand ready to serve you.

Total Resources Over Two Million Dollars

THE
FIRST NATIONAL BANK
ADA, OKLAHOMA

P. A. NORRIS, President
G. J. MORTON, Vice-Pres. S. K. GRANT, Cashier
R. W. SIMPSON, Vice-Pres. F. C. NORRIS, Asst. Cashier

pumping unit used in this field will have a long stroke and relatively slow motion. This is in keeping with the best practice developed in Seminole and elsewhere.

If the well is pumped on the beam with rig front it is still probable that the long stroke will be used. By proper counterbalancing this type pumping outfit it is possible to get relatively high efficiency and as the outfit is standard it can be used here ar elsewhere satisfactorily.

Derrick for Pumping Wells

One of the first items to be considered in equipping a well for pumping is the type derrick to be used. From an "Engineering Study of the Seminole Area," by R. R. Brandenthaler, W. S. Morris and C. R. Bopp of the U. S. Bureau of Mines, it is found that "some of the companies operating in the Seminole area made a practice of leaving the rotary drilling derrick in place to serve the well after the well had been put on the pump. Other companies replaced the drilling derrick with a shorter derrick. In the early life of the area, virtually every rotary derrick was moved as soon as the well was completed." In this respect operating conditions in Fitts Pool are similar to Seminole for some of the heavy rotary derricks have already been moved and the well head has been equipped with Christmas tree with tubing connected into an oil and gas separator.

When the development of the Seminole area reached a point where rotary derricks were not in so much demand, they were often left in place. The chief advantage in having a tall derrick at a pumping well is that it permits faster time in pulling rods and tubing. When the rods are hung in the derrick, and the tubing is pulled in fourbles, several hours can be saved in making a round trip with the rods and tubing.

It was estimated that if rotary derrick was replaced by an 84-foot pumper about $350 was saved in the Seminole Field. Using the same method of estimating, but substituting present day derrick costs, it is found that there is practically no difference in cost if the rotary derrick is replaced with pumping derrick.

Other conditions are to be considered in deciding upon a change of this kind but it is interesting to note that with present day prices, which are much lower than in 1926-27 when Seminole was being drilled and equipped, there is no material difference in the cost to operator by using standard rotary or shorter pumping derrick over a pumping or gas lift well. There still remains the differences cited above in pulling time in favor of the high derrick.

Prime Movers

In Seminole the gas engines used for pumping ranged from 25 to 55 horsepower. The 35 or 40-horsepower, single-cylinder, two-cycle gas engines were the most commonly used, although 45 and 55-horsepower engines are preferred by some on account of the faster pulling speeds.

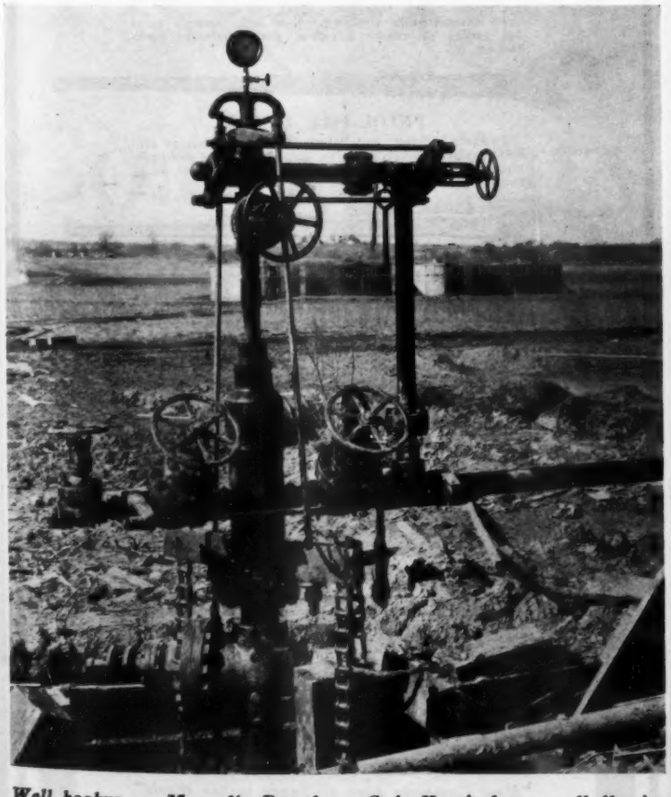
Experience gained since the report was written shows that in the long run it is more economical to install the larger size engines because as the wells grow older and the engines wear it requires much longer to pull and run rods and tubing with the smaller engines and the extra time consumed in this operation plus the loss of production during the longer shutdown periods would have paid for the apparent saving in first cost of engine many times.

On the Seminole wells pumped by electricity, 20/50 and 25/65-horsepower, two-speed motors were used. The power is transmitted by worm gear or herringbone type reduction units or through a countershaft and belting to the band wheel.

Modern practice in equipping pumping units with electric motors has introduced many refinements in power transmission equipment and with the latest type pumping unit gears are built into the machine and carefully designed for all duties.

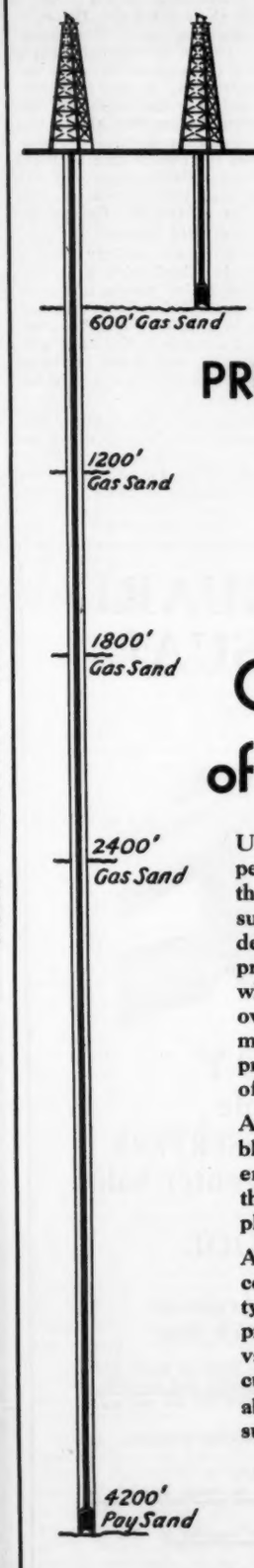
For pulling rods and tubing there are several types of portable outfits that can be moved from well to well as desired and with a derrick over the hole can quickly and cheaply furnish power for this work. These units permit the use of pumping units with motors selected for the particular duty to be performed, thereby lowering electric power costs.

Several leases in the Seminole were later in their life pumped by heavy duty central powers. It is not known that this type of pumping is contemplated for the



Well hookup on Magnolia Petroleum Co.'s Norris lease. well flowing through tubing

It is well to Remember:



CAMERON

PREVENTS BLOWOUTS

whether you have

ONE MILE

or

ONE THRIBBLE

of drill pipe in the hole!

Users of Cameron Preventers do not depend on the weight of the drill pipe to hold the string in the hole when dangerous pressure is encountered. No waiting until great depths are reached to effect real preventer protection. Pressure hazards so common when coming out of the hole are instantly overcome by the powerful hydraulic closing means of Cameron Preventers, and are properly controlled regardless of the amount of pipe in the hole.

All the pipe you need in the hole to avert a blowout with a Cameron Preventer is just enough for ram contact . . . one joint, one thribble, or one mile of drill pipe accomplishes the same purpose.

And, all Cameron Preventers are remotely controlled . . . . the manually operated type by rotation of the hand screws; the pressure type by the turn of a quick-acting valve. And the patented locking device securely locks the rams in closed position, enabling the operator to release closing pressure after seal is effected.

Familiarize yourself with details of Cameron Preventers through our catalog.

CAMERON IRON WORKS, *INC.*

HOUSTON, TEXAS, U.S.A.

REPRESENTATIVES AT

MIDLAND, TEXAS — LAFAYETTE, LA. — OKLAHOMA CITY, OKLA.

EXPORT: 74 TRINITY PLACE, NEW YORK, N. Y.

Fitts area where wells are spaced 1 to 10 acres or 1,320 feet apart and may not lend themselves as well to rod pumping as on closer spacings. The surface in the Fitts Pool is quite level and this may offset the wider spacing and later some companies may decide to use heavy central power units and jacks.

It was in the Seminole Field that a great deal of data were accumulated on rod loading. Since Seminole early experiences much has been done to improve sucker rods and there no trouble is anticipated in pumping Fitts wells either with rods, tubing or working barrels.

There is also much accumulated data available on pumps to be used in wells of the type encountered in Fitts Pool. While operators may have preference for some particular type of pump, their needs will be easily filled and there are enough different types of pumps and working barrels on the market and suitable for this new field to satisfy everyone.

Gas Lift Practice

Gas lift as applied to oil wells was developed largely in the Seminole Field. While this method of producing oil is well known it may be appropriate to review it here.

In a well that is not flowing, the fluid level will rise in the course of time to a point at which the weight of the column of oil equals the rock pressure, and it will remain stationary at that level until certain forces lower the level. This column may be measured in feet or in pounds per square inch. If the pressure at the foot of the column and the average specific gravity of the fluid is known, the height in feet of the column can be computed. In the absence of more accurate measurements, it has been customary to estimate the height of the fluid level from the pressure at the bottom of the column, by dividing the pressure in pounds per square inch by 0.434 to obtain the equivalent column of water and then dividing this quotient by the specific gravity of the oil, thereby obtaining the equivalent column of oil.

This method is not strictly correct since the oil is mixed with a certain amount of gas which makes it lighter than when separated from this gas, and would result in a greater height of column than that computed. For most purposes, however, the calculated height of the oil column will serve as a fair approximation.

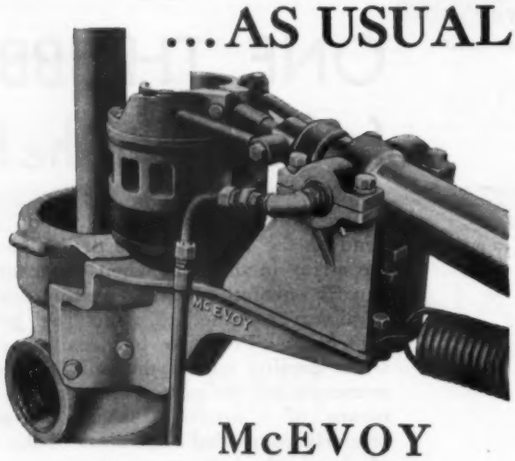
It might be assumed, for example, that the rock pressure is such as to cause the oil to stand at a point such as "a" in Figure A, equivalent to, say. 250 feet. If the specific gravity of the oil is 0.9, and assuming that there is no admixture of gas with the oil, this height would be equivalent to a pressure at "f" of 250 times 0.434 times 0.9, or 97.65 pounds per square inch. Let it be assumed that the oil is removed at the rate of 500 bbls. per day, or at a rate that will lower the fluid level to "b"; the fluid level will be 200 feet in height, the pressure "f" will be 78.12 pounds, and the differential between the rock pressure and the pressure when flowing at 500 bbls. per day will be 97.65 pounds less 78.12 pounds or 19.53 pounds. The back pressure when the oil stands at "a" is 97.65 pounds and when standing at "b" it is 78.12 pounds. If the oil level be lowered successively to points "c," "d," "e," and "f," by removing, say, 800, 1,000, 1,100, or 1,110 bbls. per day, respectively, the pressure at "f" would be 58.59 pounds, 39.06 pounds, 19.53 pounds and 0 pound per square inch, respectively. It will be noted that the assumption is made that for each successive lowering of the level by 50 feet the rate at which the oil is increased per day is reduced, although the total production per day is increased. It will be noted that there is assumed to be very little increase in production over the previous rate when the last 50 feet is lowered, that is, when the oil level stands at "f." This is in accord with actual observations in certain fields, although the rate of change will vary in every well and in every field. It is not possible to determine, previous to making a test, just what these changes will be in any given well. The changes in the level of the oil, and consequently in the pressure at "f," are determined by the rate at which the oil is lifted from the well. This does not depend upon the method of lifting, whether it be by means of natural flow, gas lift, pumping, bailing or swabbing, assuming that a steady production be maintained by whatever method is employed.

Lifting the Crude

If the casing in Figure A be closed tightly at K, it is probable that in the course of time gas would arise in the casing and gradually displace the oil, and the actual oil level would be depressed to some point just above "f," perhaps to the top of the oil sand, but the pressure at "f" would remain unchanged, that is, it would be same as that of the rock pressure if sufficient time be allowed for an equilibrium to become established, and in this case the oil level would be only a theoretical level, that is, one that is equivalent to the pressure at "f."

The net height to which the oil must

McEVOY ON GUARD ...AS USUAL



McEVOY
Proven and Reliable
BLOWOUT PREVENTER INSERTERS
Comprise 75% of New Preventer Sales
in the
FAMOUS FITTS POOL

Mechanically operates standard types of Packing Assemblies under derrick floor

CERTAINTY OF SEALING. When it is considered that often the entire investment in a well in a high pressure area is at stake the reliability and quickness of operation of the McEVOY BLOWOUT PREVENTER INSERTER are two factors that win the favor of efficient oil men.

SIMPLY PULL LEVER AND PRESSURE GUN SHOOTS PACKING ASSEMBLY AROUND PIPE.

EASY AND SAFE TO REMOVE PACKING ASSEMBLY.

Only ten to thirty minutes are required for two men to change assembly for different pipe sizes.

Does not obsolete standard Hosmer Type equipment, but improves it. The new mechanism is attached to your present equipment.

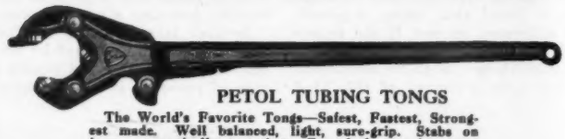
WRITE FOR NEW McEVOY CATALOG.

NRA CODE

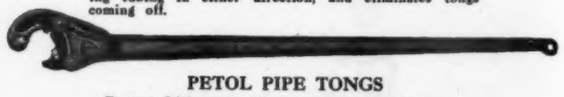
J. H. McEVOY & CO.
Established 1906
Texas Ave. at Milby St.,
HOUSTON, TEXAS

SPECIFY McEVOY Completely Assembled and Tested CHRISTMAS TREES

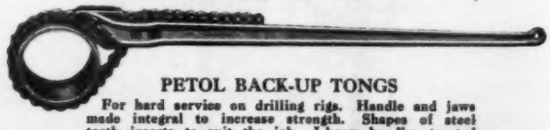
PETOL TOOLS
the hands of the OIL INDUSTRY



PETOL TUBING TONGS
The World's Favorite Tongs—Safest, Fastest, Strongest made. Well balanced, light, sure-grip. Stabs on jaws automatically engaging. Cam lock permits turning tubing in either direction, and eliminates tongs coming off.



PETOL PIPE TONGS
Fastest, Lightest, and Safest pipe tongs. Instant grip and perfect ratcheting. No crushing. Single handle eliminates mashed fingers. Four edge bits, easily turned or replaced, of high speed steel.



PETOL BACK-UP TONGS
For hard service on drilling rigs. Handle and jaws made integral to increase strength. Shapes of steel teeth inserts to suit the job. I-beam handles treated for strength.

PETOL FRICTION TONGS
No teeth or bits. Turns job by friction alone. Curved, one-piece jaw protects pipe against damage. Cannot jam or bind. Made in sizes 1" to 8" and special sizes.

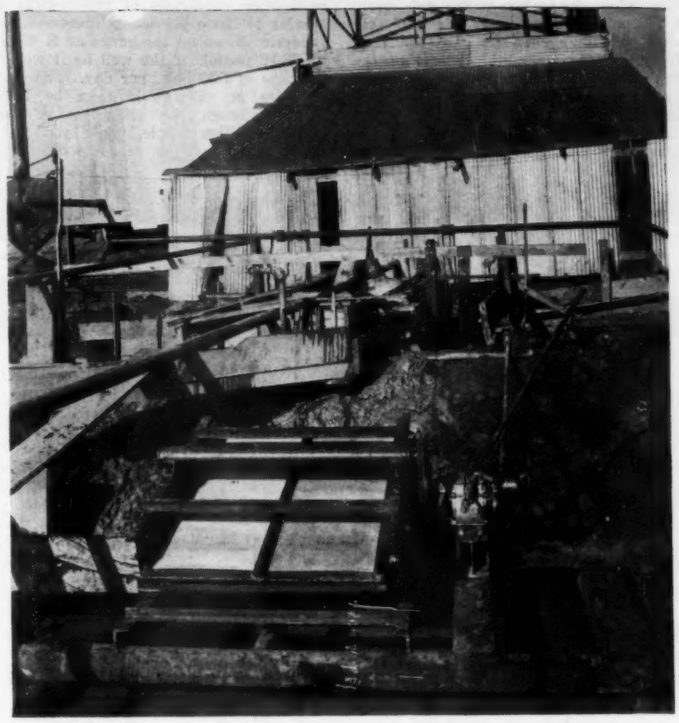
PETOL PIPE WRENCH
Entirely new wrench for pipe work. Self-adjusting to work. Ratchets freely, no jam. Strongest pipe wrench made. High Speed Steel Inserts in larger sizes. Sizes 8" to 60".

5 OF 18 TYPES
OF 150 SIZES

GEARENCH MFG. COMPANY
HOUSTON, TEXAS, U. S. A.
"Most Complete Line of Tongs in the World"

be lifted in each of the cases cited would be the distance to the top of the well measured from "a," "b," or "c," as the case might be. When producing at 1,000 bbls. per day, the lift would be 100 feet greater than when producing at "b," or at the rate of 500 bbls. per day.

In Figure B, there is shown a casing within which there is hung a tubing, and within the tubing there is suspended a gas line, open at the lower end for admitting gas to the flow tubing. Assume tentatively that there is no gas with the oil, and that in order to lift the oil it is necessary to admit gas to the gas line. If the oil level be standing at "a," or 250 feet above "f," and the rock pressure be 97.65 pounds, as previously assumed, there would exist the same oil level in all three lines, that is, the casing, the flow tubing and the gas line. If, then, gas under sufficient pressure and in sufficient volume be admitted to the gas line to lift 500 bbls. of oil per day, the oil would be displaced entirely from the gas line into the flow tubing, and a flow would be set up in the flow tubing with pressure of 78.12 pounds at "f," resulting in a gasified mixture of oil varying in density from the bottom to the top of the flow tubing; and if the flow tubing is not constricted, or "pinched" or partly closed in at the top, the pressure at the top would be that of the atmosphere. There would be a column of oil actually standing at "b," 200 feet above "f," between the casing and the flow tubing. The net distance that the oil is lifted would be the distance from "b" to the top of the well at J, at which point the oil is discharged. The distance from "b" to the lower end of the gas line would be the submergence of the gas line and would be 200 feet less the distance that the end of the tubing stands above "f." If sufficient gas is admitted to lift 1,100 bbls. per day, the fluid level would drop to "e," the pressure at "f" would be 19.53 pounds, and the submergence would be slightly less than 50 feet, and the lift would be the distance from "e" to the top of the well. The gauge pressure in the gas line at I would be the pressure at the lower end of the tubing plus the friction loss due to the gas being forced through the gas line to the bottom of the well. The gauge pressure in the gas line at the surface may be far from being the pressure at the lower end of the gas line. In a series of friction tests made with 4,000 feet of 2½-inch upset tubing, it was found that to drive 1,325 cubic feet of air through this line and to maintain a pressure of 4 pounds at the discharge end of the line would require a pressure of 172 pounds at the input end of the line. From this it can be seen that the friction loss may be a very important matter to determine, in order that the feet of submergence and the feet of lift may be ascertained.



Pioneer Drilling Co. vibrating screen removing coarse material from drilling mud in Fitts Pool

If There Were No Gas in Oil

For the purpose of simplifying the explanation of submergence it has been assumed that there is no gas associated with the oil; this is very seldom the case, however. If there be gas in the oil, as in the example assumed with Figure B, and if the casing be closed at K, the gas would rise in the area between the casing and the flow tubing and would displace the oil causing it to drop to the lower end of the flow tubing. There would be no physical oil level, but the pressure "f" would remain the same as if the oil were standing at "a" or at "b," as the case might be. A pressure gauge at K would indicate the pressure existing at the lower end of the flow tubing, allowing, of course, for the additional pressure due to the weight of the standing column of gas, and would be practically the same pressure as that existing at the lower end of the gas line. There would not be an actual fluid level, but the pressure condition would supply the same data as if the oil level actually existed, and from this the feet of submergence and the feet of lift can be readily calculated.

If the condition in Figure C is considered, where a gas line extends to a point close to the bottom of the well, and gas admitted at such pressure and volume as to lift 500 bbls. per day, there would be no actual fluid level, but the pressure at "f" would remain as before at 78.12 pounds equivalent to an oil level of 200 feet standing at "b." Likewise, in Figure D where a flow tubing is suspended in the well and the gas admitted at I, and if 500 bbls. per day be lifted the pressure at "f" would be 78.12 pounds and the theoretical fluid level could be calculated, thereby determining the feet of submergence and the net distance in feet to which the oil is lifted.

If there is sufficient gas with the oil to flow the oil without the aid of external gas, and if the flow tubing were

Fitts Field
And
Coal County
Oil
Leases
Royalties
Production
Drilling Blocks
Appraisals
Charles J. Hagerling
Aldridge Hotel
Ada, Oklahoma
or
719-721 Petroleum Bldg.
Oklahoma City

ATTENTION:
Fitts Pool
Operators

Use
CORBETT
complete
WHIPSTOCK
SERVICE
on your
SIDETRACKING
JOBS

Using the Kinzbach . . . the only whipstock which assures a millout between couplings.

GIVES YOU GOOD, CLEAN WINDOW 10 TO 12 FEET LONG, ELIMINATING THE COST OF EXPENSIVE FISHING JOBS.

Whipstock automatically set and locked at the point where you want to mill out. It will remain where set.

If your hole has deflected from proper formation, by proper orienting and setting you can either straighten up in the right direction or deflect to get back to correct position.

IF YOU WANT A WHIPSTOCKING JOB THAT WILL NOT SHIFT POSITION AND CLOSE THE HOLE . . . A JOB DONE TO PERFECTION—write, wire, or phone

Office Phone, Capitol 5327
Long Distance 363
NIGHT NUMBERS:
Bryan Wilcox...Wydown 91680
J. B. Gibson....Taylor 5528
Chas. Wallace....Lehigh 4682

The
CORBETT
CORPORATION
General Sales Agents, 2418 Winter Street
HOUSTON • TEXAS

suspended in the well as in Figure D, with gauge at K, there would exist similar conditions to that if the gas were supplied to the well; the gauge at K would register approximately the pressure at "f," or more exactly it would register the pressure at the end of the tubing to which pressure should be added due to the weight of the static column of gas. From the pressure so obtained, the theoretical oil level, and the submergence can be calculated, also the net theoretical distance to which the oil must be lifted.

Submergence

Submergence is the term that has been applied to the depth to which the air or gas line is submerged in the liquid that is being lifted. The starting submergence in the example illustrated in Figure C is the depth in feet below "a" to which the gas line is lowered, and if lowered to "f," the starting submergence would be 250 feet and the equivalent pressure would be 97.65 pounds. In this case, however, the starting pressure would be somewhat greater than 97.65 pounds owing to the fact that on starting to admit gas into the gas line there is a certain quantity of oil in this line that must be displaced and which cannot re-enter the oil sand in the short time that would be required to admit the gas, and consequently must enter the space between the tubing and the casing. The starting pressure will be increased by the height to which the level of the oil in this space has been raised.

Working submergence, or operating submergence, is the depth of the fluid, actual or theoretical, above the lower end of the gas line when the well is flowing. Thus, when producing 500 bbls. of oil per day the operating submergence is approximately 200 feet, or 78.12 pounds, and when producing 1,100 bbls. per day, the operating submergence is 50 feet or 19.53 pounds.

It is necessary to make an estimate of the submergence in order to ascertain the height to which the fluid is lifted. Both the submergence and the lift must be known in order to calculate the efficiency that is being obtained in the operation.

Back Pressures

The question of back pressure is one that is subject to considerable misunderstanding. It has been customary to consider the pressure held on the trap, or the pressure held on the tubing just back of the flow nipple as a back pressure. If a well were flowing through the casing, and if it were pinched in by a valve or flow nipple as at K, in Figure A, there would be a back pressure considered as at the point K, but there would be no way in which the back pressure at the point "f" at the bottom of the well, could be determined. If, however, the well were tubed, as in Figure D, and the flow pinched at J, we could determine the back pressure as at the point J, and by having a pressure gauge at K, the pressure at the point K could also be determined which would be fairly close to the pressure at the lower end of the tubing, taking into account, of course, the weight of the static column of gas between the casing and the flow tubing. By varying the pressure at J, there will be caused a variation of the pressure at the lower end of the tubing which will be noted on the gauge at K. In Figure D, if the tubing were suspended with the lower end very close to the point "f," assuming the production conditions of the well to be similar to those previously discussed, the pressure shown on the gauge at K would be 78.12 pounds if the well be flowed at the rate of 500 bbls. per day. The back pressure at "f" would then be 78.12 pounds though the gauge at J, just under the flow nipple, might register 5 pounds or 10 pounds or some other figure. The importance of the back pressure at J does not depend on this pressure of itself, but on the effect it causes in the well at "f." In other words, the place where back pressure possesses a significance is at "f," and pressures at J, no matter how brought about, are of no consequence except as they influence the pressure at "f." If the well in Figure D produces 500 bbls. per day, the pressure at "f" will be 78.12 pounds whether the well be flowed naturally, by gas lift, pump, swab or bailer, or whether the back pressure at the top be 5 or 10 pounds, assuming that the production is a steady one. The statement is sometimes made that the gas lift sets up a back pressure on the sand. This is true to the extent that it is true of any other method of producing oil, in that if the well in Figure D is produced at the rate of 500 bbls. per day the back pressure on the sand will be 78.12 pounds. If the well be produced at 1,100 bbls. per day there would be a back pressure of 19.53 pounds, remaining on the sand whether it be produced by gas lift, natural flow, pump or other means.

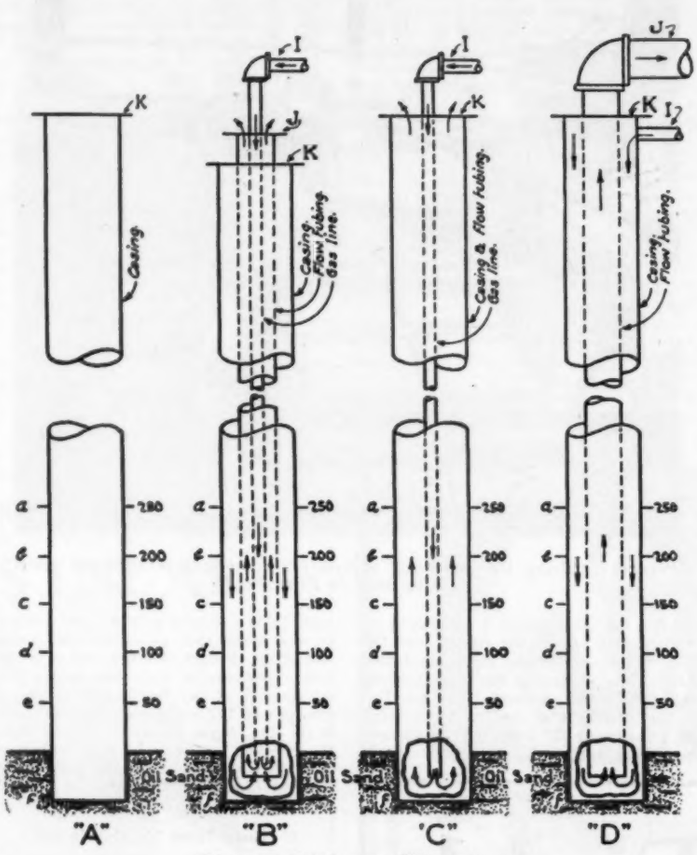


Diagram showing gas lift systems

Friction losses may become very great especially if the discharge end pressure be low when flowing large quantities of gas through a small tubing. The pressure required to force 700 cubic feet of air per minute through 4,444 feet of 2½-inch pipe, where the discharge pressure is 2 pounds, is 90 pounds at the input end. If, then, a well be equipped with a flow tubing of 2½-inch diameter, and the rock pressure be 50 pounds and we attempt to force 700 cubic feet of air per minute through this line and discharge it at the surface at 2 pounds the pressure at the input end would be 90 pounds which is 40 pounds higher than the rock pressure. There would be no flow of oil whatsoever at the discharge end, in fact there would be a serious loss of air since part of the air would flow back into the sand and only a part of it would issue from the discharge end of the tubing.

Every well has a fluid level at which it is most efficient to produce the well both for oil and for gas; this point may, or may not, be the maximum rate at which it is possible to produce the well. When a well is producing through a tubing of a given diameter, either by natural flow or by air lift, there is a production rate beyond which it is impossible to go with that particular diameter of tubing. This rate beyond which it is impossible to go may not be the economical rate at which the well could or should be produced. Care should be taken to determine which of these rates has been reached, since the use of tubing of too small a diameter might reduce the efficient rate at which the well should be produced and yet this fact could easily remain unknown.

The theory has been advanced that a pumping well can operate with a gas-oil ratio that is less than that of a well flowing by natural means or by use of the gas lift, on the basis that no gas is required to lift the oil in a pumping well. Actual comparisons on wells employing gas lifts followed by beam pumps have shown no appreciable difference in the gas-oil ratio when the well is being operated at the same capacity whether it be on the pump or on the gas lift. This is a logical result since the production of a given quantity of oil whether by gas lift or by the pump will maintain the same liquid level, and the flow of oil and gas from the sand into the well is controlled by the liquid level rather than by the means employed in lifting the oil. The quantity of gas required to propel the oil through the sand into the well must be allowed to issue from the well, else the oil will not flow into the well.

It is desirable, of course, to control and to escertain the liquid level at which the oil and gas will flow into the well in the most efficient manner, and to accomplish this purpose some engineers raise or lower the tubing string. In some fields the fluid level control is changed to the rate at which the well is produced rather than by changing the length of tubing. This method requires the use of proper diameters of the pipe, and the use of tapered tubing in order to obtain the best efficiencies.

Separator on J. E. Crosbie. Inc., No. 2 Hardin

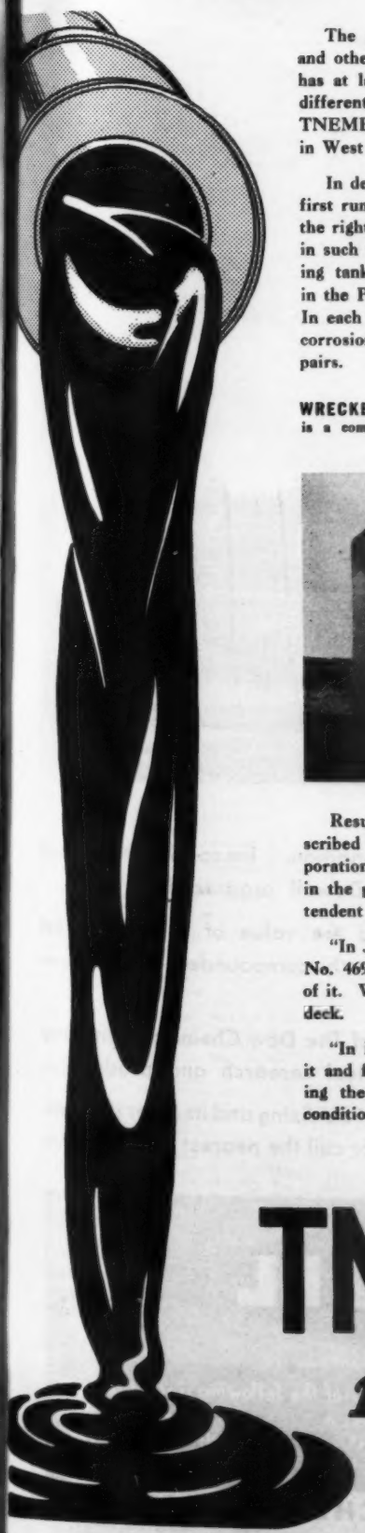
Development Results

The tabulated story of field developments in the Fitts area is given on Page 69, showing initial and potential production of completed wells and status of drilling wells in the Fitts Pool.

MIDCONTINENT MAP NEWS
VOL. I. TULSA, OKLA. NO 21
Take a Trip to Oklahoma's Newest Oil Plays—Without Leaving Your Office Via
Mid-Continent Abstract Maps
Southwestern Counties: JACKSON, TILLMAN, GREER, BECKHAM
Southeastern Counties: PITTSBURG, COAL, ATOKA, PONTOTOC, JOHNSTON
Latimer & Pushmataha (Will Be Published Soon)
All Maps Up to Date and Renewable
MIDCONTINENT MAP CO.
Nat'l Bank of Tulsa Bldg.
Phone 7221

At Last! REAL PROTECTION

for steel tanks against sour crude



The problem of handling the sour crudes of West Texas and other areas, in steel tankage, without destroying the tanks, has at last been solved by a coating material totally new and different from anything known in the past. This material is TNEMETANK No. 469, developed after long experimentation in West Texas by the Tnemec Company, of Kansas City.

In developing TNEMETANK No. 469, numerous tests were first run on panels suspended in West Texas oil tanks. When the right formula was perfected and had demonstrated its merit in such tests, TNEMETANK No. 469 was used in reconditioning tanks located in Howard, Crane and Pecos counties, and in the Penwell district, all in the West Texas sour crude area. In each such test the tank had already failed in service due to corrosion and was subject to junking or to expensive repairs.

WRECKED BY SULPHUR— This tank in Crane County, Texas, is a complete loss, and shows what corrosion from sour crude is doing to steel tanks.

Results were the same in all instances, and are well described in the following statement by the Weekley Oil Corporation, several of whose tanks in Crane County are shown in the photograph at right, herewith. W. W. Allman, Superintendent of this company, states in a letter:

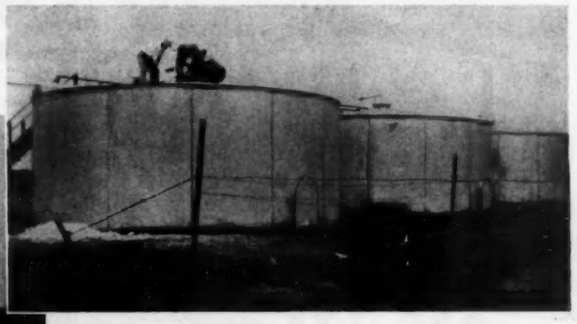
"In July, 1932, I treated a low 500-bbl. tank with Tnemetank No. 469. This tank at that time had 48 holes in the bottom of it. We applied Tnemetank No. 469 on the bottom, sides and deck.

"In February, 1934, I opened this tank to inspect and clean it and found the Tnemetank in perfect condition and still filling the holes perfectly and sticking to the sides in a firm condition.

"March, 1934, I treated another tank in the same battery that had 28 holes in three sections which I had not patched but applied Tnemetank over these holes and they are holding in fine shape.

"All of my tanks will be treated with this Tnemetank in the future."

The tank which Mr. Allman opened for inspection, in February, 1934, was again opened for inspection by representatives of a considerable number of interested West Texas oil companies, in July, 1934, and the Tnemetank was again found to be in perfect condition, and the tank apparently in shape for additional years of 100 per cent service.



RECLAIMED BY TNEMETANK NO. 469— Tank failed in service due to corrosion. Interior coating of Tnemetank plugged holes and stopped further corrosion. Tank has completed 2 years of service since and is in good condition.

Many West Texas oil companies are now using Tnemetank No. 469 and report that it is not only the one product which has stood up at all, but that it is doing a *PERFECT JOB!* We will be glad to furnish names of users on request.

Crudes containing sulphur in varying degrees find their way into much of the nation's oil tankage. TNEMETANK No. 469 should be investigated by every company which uses steel tankage for storing crude oil. Send the coupon for full particulars.

WATER-SEAL DECKS. In addition to the uses above outlined, Tnemetank No. 469 in combination with Tnemec No. 6 Red Primer on water-seal decks is making an equally impressive record for 100 per cent service. Ask for Tnemec Bulletin 15-34.

Representatives and Distributors in All Principal Oil Fields

TNEMETANK No. 469

PATENT PENDING

Brand New! Totally Different!

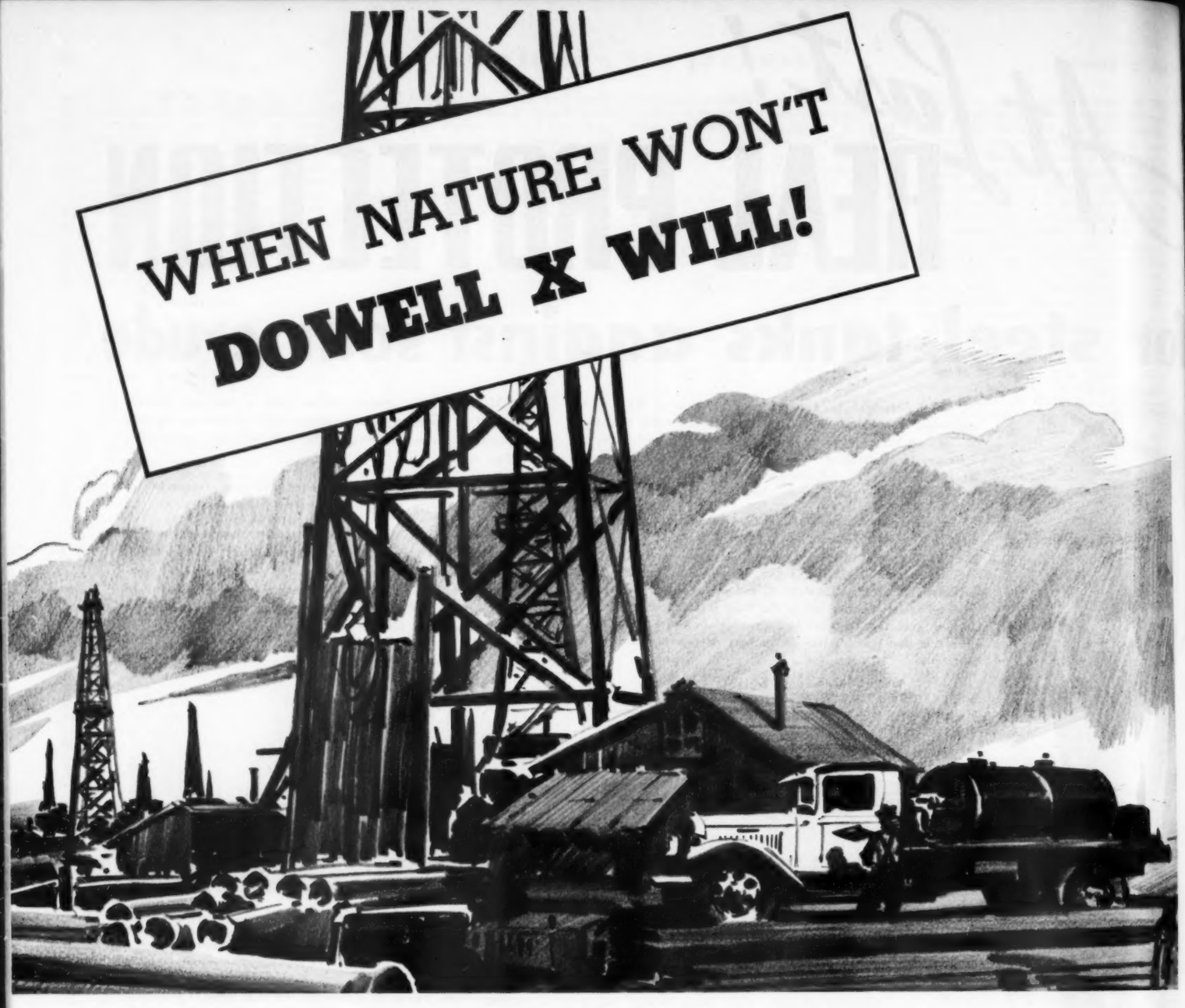
MAIL THIS COUPON

TNEMEC Co., Inc.,
3122 Roanoke Road,
Kansas City.

Please send me full particulars about Tnemetank No. 469, and name of nearest distributor.

NAME_____ STREET_____

CITY_____ STATE_____



When the forces of nature fail—when flush production doesn't materialize or a dying property needs reviving—let Dowell come to your aid.

You can rest assured Dowell will not recommend treatment unless its study of every available factor—geological and physical—points to success. Dowell has no interest in wasting producers' money or casting a shadow on its own growing reputation.

Dowell uses only Dowell X—the *inhibited* acid that does its job without danger to tubing or casing. Moreover, Dowell employs only trained treating engineers, fully equipped with knowledge and experience to meet any condition. Inexperienced "acid dumpers" have no place in the Dowell organization.

Already Dowell has demonstrated the value of its specialized knowledge—the worth of its correctly compounded chemicals—in thousands of wells.

Remember, Dowell is a subsidiary of The Dow Chemical Company—recognized as a leader in chemical research and production.

Let Dowell give you all the facts about acidizing and its other services. To investigate costs nothing. Write or call the nearest Dowell office.

DOWELL
INCORPORATED
A subsidiary of
THE DOW CHEMICAL COMPANY

Executive Office — Midland, Michigan. General Office—Kennedy Bldg., Tulsa, Okla. Southern District Office—Petroleum Bldg., Fort Worth, Texas

Dowell Incorporated maintains a fleet of fast, modern well-treating trucks at 16 convenient points—ready to serve you on a moment's notice. Each is manned by trained personnel who know their job and will protect your property. Call the nearest Dowell district office.

DOWELL

For information phone, write or call at any of the following district offices:

LAWRENCEVILLE, ILL.	SEMINOLE, OKLA.	TULSA, OKLA.
MIDLAND, MICH.	SHELBY, MONT.	WICHITA, KANS.
MIDLAND, TEXAS	SHREVEPORT, LA.	WICHITA FALLS, TEX.

OIL AND GAS WELL CHEMICAL SERVICE

Completions and Drilling Operations in the Fitts Pool, Pontotoc County, Oklahoma

Owner and farm—	Location	Comp. date	Bromide	First sand	Second sand	Total depth	Initial production	Potential production
Carter, L. Brown 1	NW SE SE 25-2n-6e	1- 8-35	4,050	4,170	4,222	4,300	720 bbls., 1 hr.	4,413
Carter, L. Brown 2	NE SE SE 25-2n-6e	.....	4,040	4,150	4,230	4,280	600 bbls., 1 hr.	3,531
Carter, S. E. Craddock 1	NW SE NE 25-2n-6e	9-16-34	4,195	....	4,360	4,427	1,887 bbls., 6½ hrs.	5,336
Carter, S. E. Craddock 2	SE SE NE 25-2n-6e	1-28-35	4,060	4,170	....	4,305	1,370 bbls., 1½ hrs.	4,427
Carter, S. E. Craddock 3	SW SE NE 25-2n-6e	1-21-35	4,095	4,185	4,260	4,325	1,043 bbls., 1 hr. 55 min.	4,406
Carter, S. E. Craddock 4	NE SE NE Sec. 25-2n-6e	1-21-35	4,140	4,250	4,300	4,370	1,063 bbls., 55 min.	4,259
Carter et al, D. Hardin 1	NE NE SW 30-2n-7e	2-22-33	....	....	1,170	1,185	29,750,000 ft. gas	....
Carter et al, D. Hardin 2	NW NE SW 30-2n-7e	1-15-35	3,955	4,085	....	4,215	1,382 bbls., 3 hrs.	3,801
Carter et al, D. Hardin 3	NE NE SW 30-2n-7e	1- 9-35	3,950	4,060	4,110	4,170	1,327 bbls., 4 hrs.	3,233
Carter et al, D. Hardin 4	SW NE SW 30-2n-7e	Drlg. 2,452 ft.						
Carter et al, D. Hardin 5	SE NE SW 30-2n-7e	Drlg. 1,785 ft.						
Carter et al, D. Hardin 6	NW SE SW 30-2n-7e	Spudded						
Carter et al, D. Hardin 7	SW SE SW 30-2n-7e	Drlg. 80 ft.						
Carter et al, C. L. Richards 1	NW NW SE 30-2n-7e	4- 8-33	....	[3]1,273	[3]1,621	1,700	50,000,000 ft. gas	....
Carter et al, C. L. Richards 2	NW NW SE 30-2n-7e	1- 2-35	....	4,105	4,185	4,214	1,050 bbls., 4 hrs.	2,928
Carter et al, C. L. Richards 3	NE NW SE 30-2n-7e	1-27-35	3,995	4,090	4,175	4,215	944 bbls., 9 hrs.	3,069
Carter et al, C. L. Richards 4	NW NE SE 30-2n-7e	1-24-35	3,985	4,070	4,165	4,205	901 bbls., 2 hrs.	3,661
Carter et al, C. L. Richards 5	SW NW SE 30-2n-7e	Drlg. 2,987 ft.						
Carter et al, C. L. Richards 6	SE NW SE 30-2n-7e	Drlg. 1,935 ft.						
Carter et al, C. L. Richards 7	SW NE SE 30-2n-7e	Drlg. 1,876 ft.						
Carter et al, C. L. Richards 8	NE NE SE 30-2n-7e	Drlg. 1,948 ft.						
Carter et al, C. L. Richards 9	NW SE SE 30-2n-7e	Bldg. rig.						
Magnolia, Craddock 1	SE SE SE 24-2n-6e	10-29-34	4,415	....	....	4,528	265 bbls., 24 hrs.	....
Magnolia, T. Norris 1	C SW NE 25-2n-6e	9- 1-34	....	....	....	1,405	50,000,000 ft. gas	....
Magnolia, T. Norris 2	NE SW NE 25-2n-6e	11-28-34	4,195	4,285	4,340	4,365	611 bbls., 6 hrs.	2,234
Magnolia, T. Norris 3	NE NW SE 25-2n-6e	1- 5-35	4,068	4,165	4,245	4,287	1,403 bbls., 2 hrs.	4,835
Magnolia, T. Norris 4	SE SW NE 25-2n-6e	1-10-35	4,120	4,265	4,292	4,308	994 bbls., 1 hr. 17 min.	5,000
Magnolia, T. Norris 5	NW NW SE 25-2n-6e	1-26-35	4,102	....	....	4,305	777 bbls., 1 hr.	4,485
Magnolia, T. Norris 6	SW SW NE 25-2n-6e	Drlg. 3,240 ft.						
Magnolia, Shaffer (Byrd) 1	SE SE NW 25-2n-6e	Drlg. 2,630 ft.						
Magnolia, Lewis 1	SW SW SW 19-2n-7e	7-10-34	....	....	[3]3,717	4,002	164 bbls., 24 hrs.	....
Magnolia, D. Hardin 1	SW NW NE 30-2n-7e	11-28-34	4,185	4,280	4,325	4,440	153 bbls., 24 hrs.	16
Magnolia, D. Hardin 2	SE NE NW 30-2n-7e	12- 5-34	4,165	4,265	4,323	4,335	1,398 bbls., 5 hrs.	2,134
Magnolia, D. Hardin 3	SE NW NE 30-2n-7e	12- 6-34	4,185	4,265	4,320	4,345	621 bbls., 16 hrs.	787
Magnolia, D. Hardin 4	SW NE NW 30-2n-7e	Dlg. 3,210 ft.						
Stanolind, Norris Royalty 1	SE NW SE 25-2n-6e	10-30-34	....	4,100	4,210	4,249	815 bbls., 4 hrs. (tubing)	5,061
Stanolind, Norris Royalty 2	SE SW SE 25-2n-6e	1-18-35	4,100	4,216	4,267	4,315	1,229 bbls., 2½ hrs.	4,294
Stanolind, Norris Royalty 3	NE SW SE 25-2n-6e	2- 8-35	....	4,155	4,220	4,284	583 bbls., 1 hr.	3,119
Stanolind, Norris Royalty 4	SW NW SE 25-2n-6e	Coring 4,279 ft.						
Stanolind, Norris Royalty 5	NW NW SE 25-2n-6e	S.D. 1,140 ft.						
Stanolind, Norris Royalty 6	SW SW SE 25-2n-6e	Drlg. 921 ft.						
Stanolind et al, D. Hardin 1	NE NW SW 30-2n-7e	5- 1-34	....	1,220	1,365	2,295	75,000,000 ft. gas, abnd.	....
Stanolind et al, D. Hardin 1-A	NE NW SW 30-2n-7e	8-10-34	....	4,069	4,175	4,210	1,882 bbls., 9½ hrs. (tubing)	4,229
Stanolind et al, D. Hardin 2	NW NW SW 30-2n-7e	1-26-35	4,065	4,175	4,240	4,294	1,170 bbls., 2 hrs.	4,059
Stanolind et al, D. Hardin 3	SW SW SW 30-2n-7e	1-25-35	4,005	4,116	4,171	4,236	1,008 bbls., 2 hrs. 20 min.	3,791
Stanolind et al, D. Hardin 4	SE NW SW 30-2n-7e	1-10-35	[1]1,180	....	....	1,468	50,000,000 ft. gas, Gilcrease sand	....
Stanolind et al, D. Hardin 5	SW NW SW 30-2n-7e	2- 7-35	3,990	4,090	4,150	4,220	1,112 bbls., 4 hrs.	3,512
Stanolind et al, D. Hardin 6	NW SW SW 30-2n-7e	Dlg. 3,885 ft.						
Stanolind et al, D. Hardin 7	SE NW SW 30-2n-7e	Drlg. 3,467 ft.						
Stanolind et al, D. Hardin 8	NE SW SW 30-2n-7e	T.D. 815 ft.						
Stanolind et al, D. Hardin 9	SE SW SW 30-2n-7e	Rigging up						
Moore et al, Smith B-1	SW SE SE 25-2n-6e	Drlg. 3,509 ft.						
Moore et al, Smith B-2	SE SE SE 25-2n-6e	Drlg. 3,296 ft.						
Moore et al, J. L. Akers 1	NE NW NE 36-2n-6e	12-15-34	4,155	....	....	4,394	810 bbls., 1 hr.	5,120
Moore et al, J. L. Akers 2	SE NW NE 36-2n-6e	Drlg. 2,930 ft.						
Moore et al, J. L. Akers 3	NW NW NE 36-2n-6e	Rigged up						
Moore et al, Smith B-3	NW NE NE 36-2n-6e	Drlg. 3,212 ft.						
Moore et al, Smith B-4	NE NE NE 36-2n-6e	Drlg. 3,310 ft.						
Moore et al, Smith B-5	SW NE NE 36-2n-6e	Location						
Moore et al, Smith B-6	SE NE NE 36-2n-6e	Location						
Moore et al, Showers 1	NW SW NW 29-2n-7e	.....	....	1,292	1,660	1,825	30,000,000 ft. gas	....
Moore et al, Showers 1-A	NW SW NW 29-2n-7e	Drlg. 2,424 ft.						
Moore et al, Showers 2	SW SW NW 29-2n-7e	Drlg. 1,251 ft.						
Moore et al, Wirick 1	SE SE SW 29-2n-7e	9-15-33	....	....	[3]3,116	3,454	341 bbls., 22 hrs.	....
Moore et al, Wirick 2	NE SE SW 29-2n-7e	11-28-34	[3]3,915	....	[3]3,951	4,042	607 bbls., 4 hrs.	1,932
Moore et al, Wirick 3	SE NE SW 29-2n-7e	1- 4-35	3,895	4,002	4,080	4,120	290 bbls., 1 hr.	2,374
Moore et al, Wirick 4	NW SW SE 29-2n-7e	Drlg. ,1660 ft.						
Moore et al, Craddock 1	NW NW SW 29-2n-7e	11- 7-34	3,915	....	4,105	4,156	955 bbls., 4 hrs.	3,016
Moore et al, Woodruff 1	SW NW SE 29-2n-7e	12-18-34	....	....	....	4,262	518 bbls., 3½ hrs. (tubing)	3,374
Moore et al, Smith 1	NW NW NW 31-2n-7e	Rig corners						
Moore et al, Smith 2	NE NW NW 31-2n-7e	Location						
Moore et al, Smith 3	NW NE NW 31-2n-7e	Drlg. 2,447 ft.						
Moore et al, Mitchell 1	NW SW NW 31-2n-7e							
Blackstock et al, Craddock B-1	NE NE SE 25-2n-6e	11-22-34	4,025	....	....	4,250	2,389 bbls., 3 hrs.	4,827
Blackstock et al, Craddock B-2	SW NE SE 25-2n-6e	1- 9-35	4,065	4,175	4,233	4,295	1,410 bbls., 2 hrs.	4,568
Blackstock et al, Craddock B-3	NW NE SE 25-2n-6e	1-15-35	4,070	4,170	4,240	4,297	1,406 bbls., 1½ hrs.	5,075
Blackstock et al, Craddock B-4	SE NE SE 25-2n-6e	Drlg. 3,270 ft.						
Blackstock et al, Lewis 1	NE NE SE 19-2n-7e	9-11-34	....	....	[4]4,895	4,911	Abandoned	....
Blackstock et al, D. Hardin 2	NE SE NW 30-2n-7e	10- 2-34	4,128	4,208	....	4,412	919 bbls., 5 hrs. (tubing)	3,864
Blackstock et al, D. Hardin 1	SE SE NW 30-2n-7e	2- 7-34	....	....	....	1,295	8,000,000 ft. gas	....
Blackstock et al, D. Hardin 3	SW SE NW 30-2n-7e	11-11-34	....	4,160	4,245	4,300	1,982 bbls., 6½ hrs.	3,419
Blackstock et al, Hardin 4	SE SE NW 30-2n-7e	1- 9-35	4,055	4,210	4,255	4,282	1,653 bbls., 3 hrs.	4,195
Blackstock et al, D. Hardin 5	NW SE NW 30-2n-7e	Drlg. 3,203 ft.						
Phillips Pet., Norris 1	NE NE SE SW 25-2n-6e	T.D. 3,211 ft.; drill pipe stuck.						
Phillips Pet., Norris 2	SE NE SW 25-2n-6e	Drlg. 2,206 ft.						
Phillips Pet., Norris 3	NE NE SW 25-2n-6e	Drlg. 1,604 ft.						
Phillips Pet., Norris 4	SE SE SW 25-2n-6e	Drlg. 1,805 ft.						
Phillips Pet., Norris 5	NW SE SW 25-2n-6e	Drlg. 180 ft.						
Phillips Pet., Norris 6	SW NE SW 25-2n-6e	Rigging up						
W. A. Delaney et al, Hardin A-1	NW NW NW 30-2n-7e	1-26-34	....	....	[3]3,686	[5]3,962	158 bbls., 24 hrs.	....
W. A. Delaney et al, Hardin A-2	SE SW NW 30-2n-7e	12-29-34	4,030	4,115	4,230	4,240	845 bbls., 4½ hrs.	....
W. A. Delaney et al, Hardin A-3	NW SW NW 30-2n-7e	Drlg. 3,723 ft.						
W. A. Delaney et al, Hardin A-4	NE SW NW 30-2n-7e	Drlg. 1,560 ft.						
Deep Rock, D. Hardin 1	C8⅛ NW SE NE 30-2n-7e	11- 7-34	....	4,100	4,214	4,244	2,565 bbls., 5 hrs. 15 min.	4,112
Deep Rock, D. Hardin 2	SW SE NE 30-2n-7e	1-21-35	3,975	4,095	4,200	4,234	845 bbls., 2 hrs. 45 min.	3,058
Deep Rock, D. Hardin 3	NE SE NE 30-2n-7e							
Deep Rock, D. Hardin 4	SE SE NE 30-2n-7e							
Deep Rock, D. Hardin 5	NE SE NE 30-2n-7e	Rig on ground						
Crosbie & Moran, D. Hardin 1	SW SW NE 30-2n-7e	6- 1-34	....	....	1,806	1,820	40 bbls. oil, 38,000,000 ft. gas	....
Crosbie & Moran, D. Hardin 1-A	SW SW NE 30-2n-7e	12-12-34	[6]4,070	4,150	....	4,205	2,150 bbls., 4½ hrs.	3,818
Crosbie & Moran, D. Hardin 2	NW SW NE 30-2n-7e	8- 3-34	....	4,180	4,235	4,290	1,400 bbls., 8½ hrs. (tubing)	3,045
Crosbie & Moran, D. Hardin 3	NE SW NE 30-2n-7e	10-11-34	4,000	4,090	4,227	4,270	2,171 bbls., 7 hrs., 6,000,000 ft. gas	4,395
Crosbie & Moran, D. Hardin 4	SE SW NE 30-2n-7e	.....	....	....	4,216	4,230	2,040 bbls., 5 hrs.	4,312
Crosbie & Moran, A. J. Hardin 1	CN½ NW SE NE 30-2n-7e	Rig corners						
Loual et al, S. E. Craddock 1	SE NE NE 25-2n-6e	12- 8-33	....	....	....	1,414	17,000,000 ft. gas	....
Loual et al, S. E. Craddock 2	NE NE NE 25-2n-6e	7-24-34	4,310	....	....	4,448	260 bbls., 24 hrs. (tubing)	302
Loual et al, S. E. Craddock 3	SW NE NE 25-2n-6e	2- 4-34	4,320	4,460	....	4,465	125 bbls.	93
Fleetborn, J. Norris 1	SE NW NE 25-2n-6e	.....	4,320	....	....	4,488	60 bbls.	....
Fleetborn, J. Norris 1-A	SE NW NE 25-2n-6e	9-28-34	....	....	....	1,437	6,000,000 ft. gas	....
Fleetborn, Wagner 1	NE SE SE 18-2n-7e	7-14-34	....	....	....	2,460	Abandoned	....
Manahan et al, Norris 1	NW SE SE 13-2n-6e	.....	....	....	....	5,166	Dry	....
Manahan et al, Wagner 1	SW NE SE 18-2n-7e	4-10-34	....	....	[2]1,725	1,767	230 bbls., 24 hrs.	....
Manahan et al, Wagner 2	SE NE SE 18-2n-7e	5-29-34	....	....	....	71	Abandoned	....
Manahan et al, Norris 1	SE NW SE 18-2n-7e	4- 6-34	....	....	1,746	[2]1,777	107 bbls., 24 hrs.	....
Merrick et al, P. A. Norris 1	SE SE SE 14-2n-6e	.....	....	....	....	4,528	625 bbls., 24 hrs.	....
Bristow Drlg. Co., Craig-Crane 1	NW SW NW 20-2n-7e	5-29-34	....	....	....	[6]4,397	Dry and abandoned	....
Boettcher O. & G., Burris 1	NW NE NW 27-2n-7e	3-30-34	....	....	1,030	1,167	20,000,000 ft. gas	....
J. E. Mabee et al, Lance 1	SW SW NE 18-2n-7e	9-18-34	....	....	....	....	.....	....
Magnolia, Norris 1	NW SE SE 13-2n-7e	8-21-34	5,617	5,780	5,807	5,834	Dry and abandoned	....
Schermerhorn, Norris 1	NW NW NE 19-2n-7e	7-12-34	....	....	....	2,016	Abandoned	....
Sledge et al, Wooley 1-A	SW SE SW 22-2n-7e	10- 5-33	....	....	1,174	1,177	15,000,000 ft. gas	....
Burke-Greis, Chambers 1	NE NE NW 36-2n-6e	Drlg. 1,828 ft.						

[1]Gilcrease sand. [2]Manahan sand. [3]Wilcox sand. [4]Hunton lime. [5]Sylvan shale. [6]Simpson dense. [7]Cromwell sand.

Proper Installation of Steam Fire Lines Important in Protecting Storage Tanks

By W. T. GETTINGS
Conewango Refining Co., Warren, Pa.*

It is always a question as to whether steam will help to extinguish a tank fire or will aggravate it. Steam has undoubtedly put out lots of fires and just as surely has aggravated others. We know of at least one case where a 5,000-bbl. gasoline tank was extinguished with water, but this isolated case does not mean that water is suitable to extinguish a gasoline fire.

If a tank is very full and the roof has been blown off, or at least blown off on the side opposite the entrance of the steam, the steam will probably aggravate the fire, and may even blow oil or gasoline onto the ground.

Bearing these things in mind, however, we do believe that steam connections to tanks are very valuable additions to anyone's fire equipment, even though it must be used with discretion just the same as other fire equipment. Therefore, we suggest that the following procedure be followed in making these connections:

When attaching steam lines to oil tanks to be used for fire protection, we would suggest a single hub flange be placed on the top of the shell as near the top angle as possible, a long thread nipple screwed through this flange, and a tee screwed on the nipple on the inside of the tank in a horizontal position. We suggest a single hub flange and long thread nipple because in this way the tee can be placed closer to the shell of the tank and it is of some advantage to have the steam hit the shell tangentially. This will put a blanket of steam in the top of the tank with the lowest velocities possible; high velocities might cause drafts across the oil and fan up the fire instead of choking it out.

Outside of the tank an ell looking up should be screwed on the nipple, then another nipple and flange union which should have a blind gasket of tinfoil or some other light sheet packing which would seal the line against condensation from the tank. From the flange union, the line can be run to the ground or in any other convenient way to reach the steam supply.

The nipple going onto the tank and the tee inside the tank should be at least two sizes larger than the steam line feeding the tank. For instance, if a 1½-inch or 2-inch is used, then a 4-inch flange should be put on the tank, and a 4-inch nipple and tee used.

Required Steam Velocity

Considerable advantage is gained in slowing down the velocities of the steam as it enters the tank. It spreads over the surface better and also gives an appreciable instant of time to evaporate any moisture in the steam after the expansion from the 2-inch to the 4-inch line takes place.

The size and number of steam lines to be hooked to a tank for fire protection is a very debatable question, and certainly can not be determined in generalities for any plant. It depends upon the steam pressure available for this service, and also depends upon the steam generator capacity hooked to the main lines.

Of course, the tank should be covered quickly. But, it will not do any good, and may do considerable harm, to attempt to cover a tank so quickly that it takes too high a percentage of the boiler house power, and does not leave enough to run fire pumps. For this reason, calculations should be made for each plant and the size of steam feed lines installed accordingly.

When possible, it is agreed that it is desirable to fill 3 or 4 feet of the tank under discussion with steam in one minute, but if a line is put in that is too large for the boiler house to carry, in the excitement of the fire, they will undoubtedly be opened wide, even though in saner moments the men realize that it should not be done.

The safest procedure is to put in a line that is big enough to give the service desired, and at the same time not big enough to interfere with the steam supply. This point should be considered more in the smaller plants than in the large plants that have a large boiler capacity.

Line Calculations

We give the following example of a calculation of the steam feed line. The formula and data used are not as accurate as other formulas, but the more accurate formulas go into higher mathematics which some of us no doubt would find troublesome, and as we believe this abbreviated and cut-and-dry method is accurate enough we offer it. We might say that all of this information is in Kent's Mechanical Engineer's Handbook which most of us have on our shelves.

30-foot Diameter Tank:
Area—713 square feet.
Fill 4 feet with steam in one minute.
2,852 cubic feet of steam at 17 pounds absolute.
122 pounds steam per minute.

Length of steam line from control valve to tank—100 feet. Line contains seven elbows (1 elbow—40 diameters of pipe).

Steam Pressure available:
90 pounds per square inch absolute.
75.3 pounds per square inch gauge.
Cubic feet per pound—4.905.
Pounds per cubic foot—.2039.

Steam Pressure in burning tank:
17 pounds per square inch absolute.
2.3 pounds per square inch gauge.
Cubic feet per pound—24.4.
Pounds per cubic foot—.0427.

Steam Flow Formula:

$$W = C\sqrt{\frac{w(P_1 - P_2)d^5}{L}}$$

W = Pounds steam per hour = 122.
C = Constant for type and size pipe = 48.4.
w = Specific weight $= \frac{.2039 + .0427}{2} = .1283.$
P_1 = Initial pressure (absolute) = 90.
P_2 = Final pressure (absolute) = 17.
L = Length, $100' + 7 \times 40 \times \frac{1\frac{1}{2}}{12} = 135.$
d = Diameter of pipe.

$$122 = 48.4\sqrt{\frac{.1283 \times 73 \times d^5}{135}}$$

$$122 = 48.4\sqrt{.06935d^5}$$

$$1{,}488 = 2{,}342.6 \times .06935d^5$$
$$1{,}488 = 162.5d^5$$
$$d^5 = 9.15$$
$$d = 1.55 = 1\frac{1}{2}\text{-inch pipe.}$$

To calculate boiler horse power necessary:

122 pounds steam per minute equals
7,320 pounds steam per hour equals
266 B.h.p.

When using the steam flow formula given, constant C varies with the size of the pipe, the condition of the pipe inside, and also with the velocities, therefore this formula may have to be worked through two or three times before the correct answer is found. For instance, if we had guessed that a 3-inch line was necessary to feed the tank in the example above, constant C would have had a value of 59, instead of 48.4, therefore we would have had to try again and use a constant applicable to a line nearer the size we determined upon.

We also have to make a guess as to the pipe size in determining the number of feet of line corresponding to the number of elbows included, as we will allow 40 diameters of pipe length for each elbow.

The boiler horsepower required in the example above may look high and you will wonder whether you can carry that much of an additional load, but bear in mind that it is an emergency load and if it is to be successful will only be on the boilers for a very few minutes.

The number of entrances made in a tank for fire steam is a matter of personal opinion, depending upon the size of the tank. There are certainly tanks too large to use one entrance, but the exact diameter where the change should be made from one to two entrances, and the exact diameter where the change should be made from two to three entrances is one on which we can only offer a personal opinion. We do not know of any way to put this on a scientific basis except from experimentation, and therefore offer the suggestion that any tank of 25 feet in diameter or over have two entrances, and any tank having a diameter of 50 feet or over have three entrances. The number of entrances will not make any difference in the calculations of the above problem because we are not considering the short piece of 4-inch pipe going into the tank and have taken the total amount of 1½-inch pipe. The feeder naturally leaves the main line and then branches close to the tank into the two lines and the entrances are placed on opposite sides of the tank.

Testing Methods

The kind of pipe to be used for a steam fire extinguisher system is immaterial so long as it is tested frequently. If second-hand pipe is used to make the installation then the test periods should be at least every six months. If new pipe is used the test period for the first few years, at least, would be once a year.

We would hate to specify that only new pipe be used because the first cost would stop the installations of many such systems, and it is far better to have these lines installed of second-hand pipe than to not have them installed at all.

Also, we can bear in mind that even a pretty bad split in the feed line to a tank is of no particular consequence because, while it would waste steam, the lines are used so seldom that the waste would not amount to anything. Just so the line is tight enough to get the steam into the tank in a large enough volume, there is no reason to worry.

Position of Line

It is immaterial as to how the steam line approaches the tank as long as it is in a safe position if the roof of the tank in question or some other tank is blown off, but under no circumstances should the steam control valve be placed closer than 50 feet to the tank. In all cases the control valve must be placed as close to the steam header as possible so that there will be no danger of the stub between the header and the valve freezing, and it must be placed in a safe location.

The steam line between the control valve and the tank should be tested at regular intervals with air by breaking the flange union at the entrance to the tank and blanking it off. Apply air pressure into the drain valve immediately following the steam control valve. The line from the flange union to the tank proper will have to be examined without pressure.

Drain valves should be placed in the low point between the control valve and the tank, but under no circumstances should this valve be in a position which is more unsafe than the control valve itself, and should whenever possible be placed immediately following the control valve. This can be done in nearly every case if the right slope is given the main feed line when the installation is made.

The drain valve should never be smaller than one-half inch and when possible it is a good idea to weld or wedge some screen wire in the pipe so that mud daubers and other insects can not get in.

Limited Use

In conclusion, bear in mind that fighting tank fires with steam is a commonsense proposition. At times it will be successful, and when it is, the damage to the tank and contents is usually less than if foam were used. However, there will be times when it is not successful, and the fire marshal ought to certainly bear this in mind to avoid basing too many of his plans on the protection offered by steam.

Although we were asked to talk about the use of steam in tanks, I do not feel as if we could close this subject without calling attention to the fact that steam is even more valuable in certain buildings than it can possibly be in tanks—receiving houses, pump houses, over and under the filters in the filter house, pan rooms in the filter house, and in fact, nearly any closed building where fire is apt to start. The amount of steam necessary can be calculated by the same method as is used for tanks, except that the whole building should be filled.

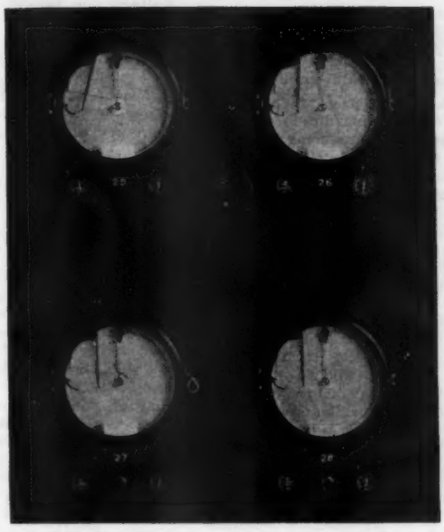
In the case of a fireproof building with wire glass windows, the steam is almost a positive fire extinguisher if the doors and windows can be closed.

*Paper presented at the semiannual meeting of the Fire and Safety Marshals of the National Petroleum Association, Bradford, Pa.,

ALBERTA OIL INVESTIGATIONS

EDMONTON, Alberta, Feb. 16.—Two inquiries affecting the oil industry in Alberta are proposed in resolutions recently presented to the provincial legislature. W. R. Howson proposes an immediate conference of representatives of independent oil companies, the city of Calgary, dry gas consumers, gasoline and oil consumers, surface owners and leaseholders, to discuss measures to develop the oil industry.

H. Bossenberry asks an investigation into the cost of producing, refining and distributing gasoline and fuel and lubricating oils.



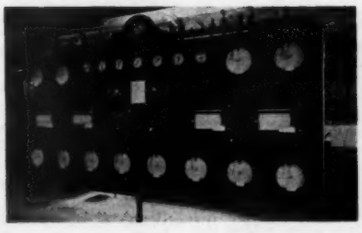
Stabilog
REG. U.S. PAT. OFF.

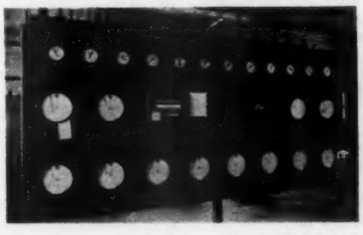
CONTROL

Predominates at SPARTAN

In the newest plants representing the latest word in engineering it is natural to find the most up-to-date control systems. That is why Stabilogs predominate at Spartan.

The Stabilog System has every advantage of instrument design





required for 100% automatic control. It does the whole job. No satisfactory substitute has been designed for this complete control system.

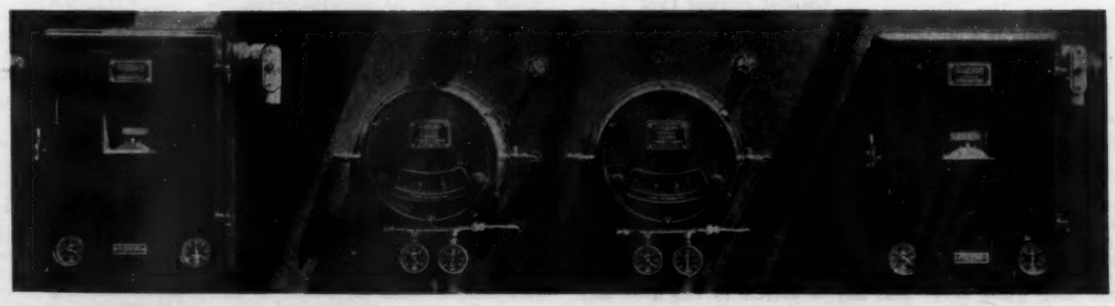
The Stabilog System of Control has been applied to the control of *Temperature, Flow, Level and Pressure.* Combined with the potentiometer system of measurement it will handle the most exacting problems of temperature control found in refinery practice. Below are shown two of the Potentiometer Stabilogs installed at Spartan's new plant.

For *smooth control* of temperature, flow, level or pressure use Stabilogs. Write for complete general information or send us your specific problem. We shall be glad to help you.

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

THE FOXBORO COMPANY, FOXBORO, MASS.

BRANCH OFFICES IN PRINCIPAL CITIES



Increasing Activity in Southeastern Oklahoma

(Continued from Page 11)

and Tillman Counties along the trend of this play. In addition many major companies and independents have leased up large blocks in the area. Jud Leath and associates of Wichita Falls, Tex., secured lease upon an 11,000-acre block in Township 3n-24w, in Harmon County, west of the discovery well. It is intended to carry the hole to 3,500 feet depth or more if necessary using rotary tools.

Present Activity

From recent reports from the field it is learned that there are the following active locations:

Location, company and description—	Status, February 16:
Sec. 34-2n-20w, Petroleum Prod., Inc., No. 1 Cole	Well at 1,416-45 ft. in granite wash; made 40 bbls. oil in 12 hrs.
Sec. 34-2n-20w, Petroleum Prod., Inc., No. 2 Cole	Spudding.
Sec. 15-2n-20w, Selby O. & G. Co., No. 1 Holt	Abandoned and skidded rig to new location.
Sec. 15-2n-20w, Selby O. & G. Co., No. 1-A Holt	Fishing at 430 ft.
Sec. 16-2n-21w, Palo Duro Oil Co., No. 1 Ealum	Drilling at 620 ft.
Sec. 1-1n-20w, Harrel, Davis & Co., No. 1 Sneed	Drilling with rotary at 1,105 ft.
Sec. 5-1n-20w, Dick Scheig et al, No. 1 C. W. Cole	Drilling.
Sec. 15-1n-20w, Whatley & Whatley, No. 1 Hardcastle	Set 8-in. csg. 615 ft.
Sec. 23-1n-20w, Dick Scheig et al, No. 1 James	Drilling below 1,650 ft.
Sec. 20-1n-20w, Whatley & Whatley, No. 1 Holt	Skidded rig; drilling at 150 ft.
Sec. 3-1n-20w, Hurk Royalty Co., No. 1 Gore	Shut down at 1,909 ft.
Sec. 13-1n-20w, Associated Oil Co., No. 1 Harrell	Drilling at 150 ft.
Sec. 3-1n-20w, J. Garfield Buell and Margay Oil Co., No. 1 Cole	Drilling below 600 ft.
Sec. 34-2n-20w, McCarty Oil Co., No. 1 Cole	Erecting rotary outfit.

It is still too early to say definitely from what formations the little oil so far discovered is coming but there is speculation as to the possibility of the Pennsylvanian formations being present beneath the so-called "granite wash" and in at least one instance it is believed by one geologist that one of the wells encountered Simpson formation. This would bring three probable producing sections into consideration—Permian or Red Bed with their granite wash base; Pennsylvanian with the possibility of the Cisco and Canyon being present in this area and if the Simpson is there, this means an Ordovician high, something that would cause great interest to the whole industry.

Drilling Practice

Diamond drills, rotary outfits and portable cable tools have been used in drilling these first wells in the Altus district but now that production has been found in the granite wash at around 1,400 feet about 10 wells have been started using portable gasoline engine driven cable tool outfits. Many of these units have been moved in from North Texas and others from eastern and northeastern Oklahoma and as the play gets under way it seems that many more portable cable tool units will be used.

It is usual practice on the first wells on each block to start a hole 17 inches in diameter and drill to about 40 or 50 feet where a surface string of 15½-inch casing is set to shut off surface water encountered at about 30 feet in this area. This is "gyp" water and is used for domestic and farm purposes but is not suitable for boiler feed water. It is not usual practice to cement this surface string, setting it with shoe on a strata of hard formation found a short distance below the base of the water sand.

Below the base of the surface string of pipe the hole is reduced to 15 inches in diameter and a string of 12½-inch pipe is set around 650 feet. This pipe is set here in some instances only temporarily because by the use of a new type of cable tool it is possible to carry the casing of any size to any desired depth.

To save setting several strings of casing to shut off upper gas and water sands as in the ordinary method of cable tool drilling this new method permits the casing to be "carried" to any depth so that it is possible in wells such as now being drilled in the Altus area to complete the well with three strings of casing, the surface string, the intermediate string and the flow string.

When the hole has been drilled to a point where it is desirable to run casing to prevent water, gas or upper oil, from entering it drilling is stopped in some formation suitable to provide a seat for casing shoe. The casing is then run to this point and below it the hole is drilled for 20 or 30 feet with regular cable tool bit. This leaves a shoulder upon which the casing shoe can rest just as in regular practice.

Below this 20 or 30 feet of hole an eccentric "T" type bit is used. This bit in cross section has the appearance of the letter "T." Looking at it sidewise it will be seen that the body is made up of what amounts to two bits, the usual type bit to the side of which has been forged another shorter section that corresponds to the upper part of the "T." The difference in length between the main body of the bit, or the stem of the "T" and the cross piece is about 6 inches. The main bit body is sharpened in the regular manner and the cross bit is also dressed to provide a cutting edge along the top side of the "T" section.

Because of its shape the center of gravity of the mass is not in a straight line drawn from socket to bottom of the main body of the bit but is offset to some point between the top and stem of the "T" section. This out-of-balance condition causes this bit to cut out the side walls as the main bit deepens the hole. Removing the walls from the regular size hole enlarges the hole drilled below the shoulder upon which the casing is set so that it is large enough to accommodate the string of casing set upon the shoulder above, but at the same time the eccentric "T" bit will run inside of this string of casing without hanging up.

Using this type bit it is possible to drill and bail the hole as deep as desired below the shoulder upon which the string of casing has been temporarily set. If another stratum is encountered that has to be cased the 20 or 30 feet of regular size hole immediately below the casing shoe is underreamed to full size of the upper and lower portion of the hole and then the casing is run to the new lower casing seat in the usual manner.

This method of drilling cable tool holes and using a minimum of casing has been successfully applied to many wells in Oklahoma, Texas and Kansas.

If the experience gained by drilling in the Panhandle of Texas area can be applied it may be that the new area around Altus can be best drilled with cable tools, although it is reported that at least one heavy rotary outfit is now in the district to make deep test if necessary. The formations above 1,400 feet so far penetrated have been devoid of water except the surface water found at about 30 feet.

Gasoline Engines Used

The cable tool and rotary rigs, as well as the diamond drill outfit, have been driven by internal combustion engines using gasoline in most instances. Since gas has been made available from Gypsy Oil Co.'s No. 1-A Kelly this is being used as fuel for internal combustion engines on other tests.

The "gyp" water encountered will require treatment the same as given similar water found all over the Panhandle and West Texas before it can be used for boiler feed water.

It is still too early to form any conclusions about the extent of the area that may be covered by this new "play" but if the Red bed surface is to be used as a gauge there is hardly any limit to the region that may be tested in every direction away from the base of the Wichita Mountains.

Marland Sounds Keynote Opening Dallas Meeting

(Continued from Page 8)

wells. Approximately 9,000,000,000 bbls. of the present recoverable reserve must be produced by mechanical appliances from some 300,000 small wells.

Small Wells in Jeopardy

During the recent past, we have seen new pools of such magnitude that one pool was capable of producing the world demand at a low price. If such a new pool is permitted to exhaust itself rapidly, with great reservoir waste and at low cost of production in competition with the 300,000 small wells through which three-fourths of the present oil reserves of the Nation must be produced, the small wells must necessarily be abandoned. The consuming public, as well as operators of small wells, the owners of land on which they are located, and the state which derives taxes from them, as well as the Nation, would be injuriously affected by the abandonment of the small producer. If the abandonment of the small producer is forced by the cheap flush production, the possibility of recovery of three-fourths of the present oil reserves of the Nation will be jeopardized, if not destroyed.

I believe it is conceded by everyone who is familiar with the oil industry that some form of reasonable regulation must be maintained which will assure a relation between production and demand and (1) assure proper conservation of a great natural resource against waste; (2) assure the farmer who owns oil-producing land, the taxpayer of the state in which the oil-producing land is located, the oil producer who produces the oil, a fair compensation when they part with an irreplaceable resource, and (3) finally, assure the protection of the consuming public for future inordinately high cost of oil products caused by inefficient production or manufacturing methods or by greed.

This regulation can be effected by one of two methods: (1) by the federal Government, which would mean a change in the Constitution and centralization of power in a bureau at Washington, or (2) by the interstate compact plant. The interstate compact plan decentralizes control and permits local and state governments to function. Under the interstate compact plan, each state will exercise its own sovereignty. Control of the oil industry within the limits of each state will remain vested in the people of the state. Each state will exercise its own police powers.

We have among us some very earnest citizens who favor federal control of the oil industry. Among this group we have also those who favor making the oil industry a public utility. The Supreme Court of the United States has repeatedly held that mining (that is, the production of oil) is an operation which is subject to the police powers of the state in which the operation takes place. The Constitution of the United States does not give the federal Government power to exercise within the states the police powers which are reserved to the states. Under the decisions of the Supreme Court of the United States, the Constitution would have to be amended before the federal Government could take control of the actual production of crude oil within the limits of a state, without the consent of that state.

There is another deeper reason against federal control and that is that it would centralize power over the oil business in a bureau at Washington.

The Compact Plan

The interstate compact plan obviates the necessity of centralization of power by providing means through which the various oil-producing states can exercise their own sovereignty. Under the interstate compact plan the people of each state will still retain all police power within the state. Each state will be responsible for the exercise of its own power to regulate the oil industry within its own borders. In exercising this power within its own borders, each state will, as a good neighbor, as well as in self-interest, co-ordinate its regulation of the oil industry in co-operation with the other oil-producing states to promote the welfare, the prosperity, and the happiness, not only of its own people and the oil-producing states, but of the Nation generally.

It was with regret that I read a statement made by Harold L. Ickes, Secretary of the Interior, this week. The Secretary of the Interior made the following statement:

"There is at least some ground for the suspicion that some of the most vehement opponents of federal control are proclaiming their belief in state compacts so as to draw the familiar red herring across the trail. They do not want federal control and, by the same token, they do not want state control. They have no patience with any suggestion that the public has any interest at all in the oil business. They want the oil industry to run wild. So, with their tongues in their cheeks, they declare for an interstate compact, convinced on the basis of past experience that it cannot succeed."

I feel that I can assure Secretary Ickes that there is no one in this conference who has his tongue in his cheek, or who is attempting to draw a red herring across the trail of intelligent constitutional conservation and regulation of the oil industry. May I repeat that I regret that Secretary Ickes has seen fit to impugn the motives of the men assembled here today representing the people of their respective states. I, for one, believe that there is no way whereby the federal Government can control the process of mining (that is, the production of oil) within the boundaries of any state without ignoring the Constitution of the United States, the rights of the state and without exercising dictatorial, arbitrary power. On the other hand, the state compact plan is an exercise of powers already existing in the people. The state compact plan is democratic in form, it is equitable, it is intelligent, it is constitutional.

ROCKY MOUNTAIN FIELDS

Rocky Mountain field production estimates for the week ending February 16 were as follows:

	Bbls.
WYOMING	
Salt Creek	17,750
Big Muddy	1,710
Badger Basin	40
Black Mountain	80
Byron	990
Dallas Derby	570
Dutton Creek	80
Elk Basin	550
Ferris	10
Frannie	240
Garland	1,240
Grass Creek	320
Greybull	10
Hamilton Dome	500
Hudson	280
LaBarge	1,200
Lance Creek	650
Lost Soldier	2,290
Midway	50
Notches	shut in
Oregon Basin	2,370
Osage	720
Pilot Butte	30
Rock River	1,610
Poison Spider	190
Teapot	10
Total	33,370
MONTANA	
Buckley-Border	210
Cat Creek	730
Cut Bank	5,200
Kevin-Sunburst	2,600
Lake Basin	40
Pondera	1,400
Total	11,180
COLORADO	
Florence	170
Fort Collins and Wellington	430
Iles Dome	2,790
Moffat	490
Orchard	60
Rangely	80
Tow Creek	180
Total	4,200
NEW MEXICO	
Artesia	580
Cooper area	3,010
Eunice area	4,360
Hobbs	31,250
Hogback	200
Jal	3,380
Lea area	1,410
Maljamar	1,830
Rattlesnake	770
Table Mesa	80
Total	45,050
Total Rocky Mountain region	93,800

Three Discoveries in Southwest Texas District But Two of Them Showed Salt Water Later

SAN ANTONIO, Tex., Feb. 18.—Three discoveries were registered in the Southwest Texas district, but the encroachment of salt water in two of the wells, which showed up the latter part of the week, tended to dull the enthusiasm. One discovery was made in the western part of Bee County, one in northern Jim Wells County and one in the Pearsall area, Frio County, the latter two showing salt water.

Southwest of Normana, and north of the Holzmark gas field, western Bee County, Dirks Brothers registered their third discovery in the county, when their No. 1 Foley, in the Kellar Survey, was completed for an initial production of 20 bbls. of distillate per day, making an estimated 20,000,000 feet of gas through a one-quarter inch choke on tubing, with tubing pressure 950 pounds and shut-in casing pressure 1,050 pounds.

At the close of the week, the well was shut in and it is not known whether the operators will complete it at its present depth, or drill it deeper to test the lower horizons. The Pettus sand was cored from 3,407-27 feet, and production was obtained after the casing had been perforated with 24 shots from 3,410-22 feet. It is bottomed at a total depth of 3,445 feet.

Sandia Field

In the Sandia gas field, northern Jim Wells County, O. W. Killam's No. 4 Wade opened the first production in that field when it flowed at the rate of 22½ bbls. per hour through three-eighths inch tubing choke, with tubing pressure 250 pounds and shut-in casing pressure 1,150 pounds. Production is thought to be the Frio or Cathoula sand cored from 4,025-28 feet, and bottomed at a total depth of 4,029 feet.

Shortly after the well was brought in, it was shut in for storage, and when it was opened again through a three-quarters inch choke, it started making salt water. It has been closed in waiting orders, and will probably be abandoned as there seems to be no prospect of it being saved.

It is the opinion that the showing of salt water in this test will not condemn the area, and that by further development a new field of considerable importance will be developed. No announcement has been made by the operator of any new development in the area, but as the well is on a block of approximately 12,000 acres, it is expected to have considerable development within the near future. The block originally consisted of 7,000 acres, acquired from the Larco Petroleum Co. for the drilling of five wells, four to the 2,900-foot sand, and one to be drilled to the deep sand. The present test is the fourth. The new acreage acquired takes in parts of the old Humble Oil & Refining Co.'s block, comprising about 4,000 acres, west of the well, was purchased for a reported price from $1.50 to $2.50 per acre. Other acreage holders are J. E. Walsh, Shell Petroleum Corp., Gulf Production Co., and Houston Oil Co.

Frio County

Five miles southwest of the town of Pearsall, Frio County, and on a block of approximately 70,000 acres, Amerada Petroleum Corp.'s No. 3 Halff and Oppenheimer, is believed to have opened the first important production from the upper Navarro sand, as well as a new field, when it flowed by heads through the drill pipe at the rate of 28 bbls. per hour, from sand cored from 3,916-29 feet. The operators later ran a 3-inch drill stem in the hole and jetted the test with gas from No. 2 Halff and Oppenheimer, a gas well, and on a 24-hour gauge the well flowed and jetted 280 bbls. The test was then cored 4 feet deeper to 3,933 feet, where it made a large amount of fluid of which 50 per cent was salt water. It is reported the water was coming from the bottom of the hole and the operators have plugged back to 3,929 feet and will make another test.

This is the fourth test drilled by the company on its large block, and the completion of No. 3 Halff and Oppenheimer as an oiler promises to start something new in the Balcones fault zone. So far, production coming from the Navarro formation has never paid off in big volume. The Cow Hill Field, northeastern Zavala County, and the Adams Field in Medina County, are producing gas from this formation, and the Ina Field in Medina County is producing oil, but from a much shallower depth, and its production has been very small.

No. 3 Halff and Oppenheimer is 500 feet northeast of the company's No. 2 Halff and Oppenheimer, which was drilled to 10,050 feet and was plugged back to 3,915 feet and completed as a gas well. No. 1 Doerring is about 10 miles southwest and was also completed for a gas well. No. 1 Halff and Oppenheimer is several miles north of No. 3 and was abandoned. Elevations and the top of the Navarro on the four tests drilled are as follows:

	Elevation	Top Navarro
No. 1 Doerring	576	3,180
No. 1 Halff and Oppenheimer	580	3,252
No. 2 Halff and Oppenheimer	540	3,120
No. 3 Halff and Oppenheimer	543	3,110–20

Duval County

One of the best wells to be registered in the Loma Field, Duval County, was made by Humble Oil & Refining Co.'s No. 2 Vela, when it made 30 bbls. per hour from a total depth of 2,792 feet. Location is in Survey No. 42, east of the discovery well.

In the same county, 8 miles southwest of San Diego, in Survey No. 291, Pearson Properties, Inc.'s (formerly Grimm and others') No. 1 Fitzsimmons, a wildcat, indicated production possibilities when it cored saturated sand from 4,369-76 feet and is now being prepared for a test.

Sinton Field

In the Sinton Field, San Patricio County, Heep Oil Corp.'s No. 1-B Welder, north of the town of Sinton, opened the first real oil production in the field when it was completed for an initial production of 20 bbls. per hour at a total depth of 5,453 feet. The test is being jetted with gas, as the pressure is not strong enough to flow the well steadily. The oil is of 39 gravity and is coming from sand cored from 5,449-53 feet. It is in the M. J. De La Garza and Sons Survey. Plymouth Oil Co.'s No. 2-B Welder in the same area is bottomed at a total depth of 6,859 feet and late in the week the operators were making an electrical coring test of the hole.

Lion Oil & Refining Co.'s No. 3 McNeil, east of the discovery well in the Jane Surry Survey, made an eight-minute drill stem test from 4,278-97 feet, and tested seven fourbles of mud and an unestimated amount of gas, and is coring. This is the same horizon from which the discovery well is producing. In the eastern part of the county, California Oil Co.'s No. 1 Blankenship, a wildcat in the A. D. Dunn Survey, created some interest when it blew out while coming out of the hole with a core, and caught fire, destroying the rig. The blowout preventer was closed and the well was killed. It is bottomed at 2,666 feet and was estimated making 5,000,000 feet of dry gas. The operators are now building derrick.

Karnes County

In Karnes County, E. E. Green's No. 1 Henke in the Don Erasmos Seguin Survey, a wildcat test, made a 15-minute drill stem test from 2,144-2,823 feet, total depth, and tested 15 feet of mud cut with oil, with no pressure, and is now waiting on orders.

South of Caesar

Six miles west and south of the Caesar Field, Bee County, Paul Meaders has acquired a 4,000-acre block, centering in the Marcello Alcarte Survey, and has proposed to start a Yegua sand test within 90 days. The block was taken on the strength of surface and subsurface geology. Three miles southwest of Firm Oil Co.'s No. 1 Grissom, in the south end of the Caesar Field, Magnolia Petroleum Co. is reported to have paid $12.50 per acre for the W. F. Erp land. The acreage consists of 1,552 acres and centers around the B.&B. Survey. Northeast of this purchase and between the Caesar Field, Neversuch Oil Co. has acquired considerable acreage and has made location for a test.

In the same county, Dirks Brothers are clearing location for their fourth wildcat test in the Pettus area. It is in the northwest corner of the L. Teague 188-acre tract in the northeast corner of the Henry Cole Survey, approximately 1 mile south of the Grayburg area. Northwest of Skidmore, in the general area of the Patrick O'Boyle Survey, Abstract No. 46, N. Gunter has completed a block of approximately 8,000 acres.

Wildcat Operations in Southwest Texas

Week Ended February 16

BANDERA COUNTY

W. B. Kyle et al's No. 1 Duke, 200 ft. NW line, 150 ft. SW line of J. A. Bennett Sur. No. 7.
Waiting on rig; drlg. wtr. well.

Plateau Oil Co.'s No. 1 Garrison, G.C.&S.F. Sur. No. 506, 1,500 ft. from N and 2,700 ft. from E lines of survey.
Drlg. 1,367 ft.

BASTROP COUNTY

Marts & Beavens' No. 2 Ray Rivers, 1,350 ft. from SE line, 2,050 ft. from NE line of Eliz. Sandifer Sur.
Dry Serpentine at 2,045 ft.

BEE COUNTY

Dirks Bros.' No. 1 Foley, 330 ft. N and W lines of Kellar Sur.
T.D. 3,427 ft.; I.P. 40 bbls. per day.

Dirks Bros. and Earl Callaway's No. 1 Milster, 4,950 ft. from N line, 990 ft. from E line of Chas. B. Shain Sur.
Moving in material.

Arthur W. Gray's No. 1 Rutledge, 3,322 ft. from N line, 250 ft. from E line of 200-ac. tract in B. Q. Hadley Sur.
Location.

Cecil Hagan's No. 1 John R. Scott, 1⅛ mi. NE of Morgan test.
Drlg. 4,450 ft.

R. M. Herod's No. 1 Kimball, 810 ft. from E line, 150 ft. from N line of 110-ac. tract in S. Winship Sur.
Comp.; wtr. well.

Humble O. & R. Co.'s No. 2 Thompson, 466 ft. NW of SE cor. of J. C. Wood tract, Wm. Burke Sur.
Drlg. shale 2,724 ft.

Mid-Continent Crude Oil Co.'s No. 2 Kimball (Grayburg area), S. Winship Sur.
Standing 2,555 ft.

Mid-Texas Oil Co.'s No. 1 Trabland, 330 ft. from S and E lines of 91-ac. tract, ½ mile E of Normana.
Rigging up.

George Pace et al's No. 1 Goree, C of Blk. 26, Tarver-Henslee Subd., Thos. B. Barton Sur.
Rigging up.

Worth Oil Co.'s No. 1 Rutledge, 1,000 ft. from N line and 250 ft. from E line of A. Hadley Sur.
Abd. 3,424 ft.

Worth Oil Co.'s No. 1-A Rutledge, 100 ft. S of No. 1, B. Q. Hadley Sur.
Setting surface csg. 180 ft.

BEXAR COUNTY

Campbell's No. 1 Cantu, offsetting Meador's No. 1 Cantau, 150 ft. SW line, Arocha Sur. No. 15.
Drlg. 1,225 ft.

N. G. Carter's No. 1 Ruiz, western part of county; (work over).
T.D. 1,710 ft.; standing.

C. A. Ingersoll's No. 1 Mann, S of Von Ormy in John Christopher Sur.
Rigging up.

Jones & Kieffer's No. 1 LaGrane, NW cor. of tract, 210 ft. each way, F. Rolen Sur.
Set packer at 586 ft.; working on test.

Geo. O'Neil's No. 1 Holly Crouch, NW cor. of 150-ac. tract.
Reaming 1,370 ft.

Duke Phillips' No. 1 Anna Lieck, 450 ft. SE line, 3,500 ft. NE line of 223-ac. tract, J. Liech Sur.
Waiting on orders, 912 ft.

BROOKS COUNTY

Heimrich & Payne's No. 1 Scott and Hooper, 1,320 ft. N and E lines of Blk. 44, Palo Blanco grant.
Drlg. 4,525 ft.

CALDWELL COUNTY

Kurz Oil Co.'s No. 1 Kurz ranch fee, 4,600 ft. SW line, 4,300 ft. SE line of Barnard Kleeamp Sur.
S.D. 4,106 ft.

Reedy & Sugs' No. 1 Thos. North Estate, 150 ft. from SE line, 1,290 ft. from SW line of 95.5-ac. tract, A. Floyd Sur.
No report.

DEWITT COUNTY

Lefevre & Spice's No. 1 A. C. Wilkins, 660 ft. from N line, 420 ft. from W line of 200-ac. tract, in James Ross Sur.
Abd. 3,011 ft.

DUVAL COUNTY

Buffalo-Texas Syndicate's No. 1 Escobas, 2,777 ft. from N line, 1,944 ft. from W line of 930-ac. tract in San Francisco grant.
Drlg. 3,968 ft.

Eckert-Peacock et al's No. 1 C. W. Sutherland, 330 ft. N and W lines of SW¼ NE¼ of Sur. 188.
W.O.C. 2,366 ft.

Grimes et al's No. 1 Fitzsimmons, 300 ft. from S line, 150 ft. from E line of Sur. 291.
Drlg. sand 4,320 ft.

Humble O. & R. Co.'s No. 1 Mucio Vela, 330 ft. S and E lines of N½ of Sec. 42, T.T. Ry. Co. Sur.
T.D. 2,804 ft.; I.P. 128 bbls. per day on pump.

Intrepid Oil Co.'s (E. R. Thomas) No. 1 Parr, 2,590 ft. S line, 150 ft. E line of Sur. 135, E. H. Valentine Sur.
Ran D.S. test at 4,851 ft.; setting csg.

EDWARDS COUNTY

Harry Adams' No. 1 Holman, 1,650 ft. N line, 330 ft. from E line, Sec. 22, C.C.S. D.&R.G.N.G. Sur.
S.D. 602 ft.; showing oil at 520-25 ft. and trying to pull csg.

FAYETTE COUNTY

Clark et al's No. 1 Becker, 750 ft. NW line, 1,300 ft. SW line of 143.74-ac. tract, in A. E. Baker League.
Location.

Ross Fenton's No. 1 Kasper (263-ac.), 3,000 ft from NE line, 1,280 ft. from SW line, of Thos. Green Sur. No. 28.
Location.

FRIO COUNTY

Amerada Pet. Co.'s No. 3 Halff & Oppenheimer, 2,100 ft. from southwesterly NW line, 300 ft. NE line of B. J. Gilman Sur. No. 16.
T.D. 3,933 ft.; P.B. to shut off S.W.

W. T. Shoemaker's No. 1 M. Roche, 150 ft. SW cor. of Carl Wenzel Sur. No. 139.
S.D. 2,325 ft.

GILLESPIE COUNTY

Ed L. Nixon's No. 3 Lindig, 12,694 ft. S line, 1,333 ft. W line, Maria Josepha Guerra Sur. No. 41.
S.D. in lime 692 ft.

GOLIAD COUNTY

Magnolia Pet. Co.'s No. 1 Albrecht, 660 ft. N line, 330 ft. SW line of J. P. Reid Sur.
Abd. 5,516 ft.

GONZALES COUNTY

Southwestern Dev. Co.'s (Kyle & Von Rossun) No. 1 W. S. Atkinson, 2,054 ft. from N line, 1,034 ft. from E line of 185-ac. tract in S. Y. Reams Sur.
Moving in material.

GUADALUPE COUNTY

J. W. Burrows' No. 1 Beuhring, 1,000 ft. S line, 750 ft. W line of Jos. Clements Sur., SW Darst Creek Field.
Location.

A. D. Locke's No. 1 Lowman, 210 ft. from SE and SW lines of 2,500-ac. tract in C. Campbell Sur.
Moving in spudder.

Seidemann et al's No. 2 Seidemann, 400 ft. from NW line, 360 ft. from NE line of 147.5-ac. tract, Esnaurrizer Sur.
Spudded.

(Continued on Page 79)

Test in Fisher County Has Hole Full of Fluid After Making Several Heads of 38.8 Oil Gravity

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 18.—Merry Brothers and Perini and the Tide Water Oil Co.'s promising discovery in Fisher County, on the Howard farm in Section 180, Block 2, H.&T.C. Survey, which showed as a possible producer last week when it logged sandy lime showing oil at 3,665 feet and was shut down at 3,670 feet, is now standing with a hole full of fluid, 50 per cent said to be water. Whether the water is coming from the bottom of the hole is the main question in regard to the test which is 6 miles northeast of Rotan and 10 miles west of the Royston Pool in the same county. Casing was lowered to 3,650 feet, and it is now swabbed down around 2,500 feet and cleaning out. It will be several days before the hole is entirely clean as there were considerable cavings.

The test is on an 8,500-acre block, three-quarters interest of which is held by Tide Water Oil Co. and the remainder by the independent operators. The test made several heads of 38.8 gravity oil, and is sure of making some kind of a well opening another pool. So far it has not started much of a lease play, Magnolia Petroleum Co. being the only major company to show much interest to date. That company has already acquired 905 acres adjoining the block held by the discoverers.

C. Elzie has escrowed 2,300 acres in a block centering in the NE Section 52, Block 1, H.T.&B. Survey, and is to start a 3,400-foot test in 60 days, 1 mile south of the town of McCaulley, near the east central edge of the county, but a long way from the discovery. This party has escrowed leases on 3,000 acres centering in Section 7, Block 21, T.&P. Survey, near the south line of the county. A 3,400-foot test is also to be drilled on this block.

Caldwell Brothers of Brownwood have purchased the A. R. McClure 80-acre tract, which is the S half SW Section 8, Lunatic Asylum Lands, 3 miles south of Abilene, and are to drill a 2,000-foot test. It is in the shallow lime area where Clarco Oil & Refining Co. of Fort Worth last week reported a good well from one abandoned in 1924. Shooting holes in the old casing and treating with acid made it a producer. Clarco Oil & Refining Co. has started a 2,000-foot test in the NW Section 7, L. A. Lands, and other tests are expected.

McCulloch County

Another exceptionally active new area in West Texas is around the small shallow discovery on the White ranch in the northern part of McCulloch County. Cardinal Oil Co. has three locations, one being down around the pay horizon. Skaggs and Brewer are drilling No. 1 Dunn in Section 951, T. L. Hartig Survey, down around 400 feet. Three other tests are drilling, one Honea and others' No. 1 Cox, in the David Pope Survey, appearing as a dry hole at 690 feet, although it may pick up the shallow sand below. The discovery well logged the sand at 660 feet, was completed at 670 feet, but was later drilled 15 feet deeper without any increase.

Pecos County

Cardinal Oil Co.'s location on the White and Baker ranch, in Section 51, Block Z, T. C. Survey, Pecos County, falls south and each of the Gulf Production Co.'s shallow discovery. The test to the east of the discovery is now underreaming at 720 feet, having at least 1,100 feet to go before it is near the shallow pay zone picked up in No. 3 White and Baker, the discovery.

Shell Petroleum Corp.'s No. 1-A Carlson-University, in Section 36, Block 16, about midway between the Gulf discovery and the Taylor-Link Pool to the west, Pecos County, was abandoned at a total depth of 2,035 feet after striking a hole full of sulphur water at 2,019 feet.

Coke County

Haggerty and others are rigging up to carry an old test deeper in Coke County, on the Gaston ranch, in Survey 11, Joseph Young Survey. This test was previously drilled to 2,560 feet and given up, but not plugged.

Twelve tests were completed in the Permian Basin this week, all but one, producers. The Means area in Andrews County got its fourth producer, No. 2 Means. It made only 5 bbls. per hour at a total depth of 4,558 feet. It is in Section 11, Block A-35, approximately 2 miles southeast of the nearest producer, and opens considerable more area to production.

Open Flow Tests

On February 13 the Railroad Commission heard operators in 30 West Texas pools generally agree to a plan of taking potentials on individual wells by open flow tests. The operators also suggested that a reallocation of the area be made following the tests. The Yates Field in Pecos County, and the Hendricks Field in Winkler County were not included. The same allowable for the district, is to be maintained, however. Gordon Griffin, chief engineer for the commission, proposed two new rules at the Austin hearing. One covers potential tests on wells treated with acid and the other on potential tests made on other classes of wells. A special hearing is to be held before any action is taken.

Winkler County

Jefferies, Fox and Butler's No. 1 Brown and Aultman, in Section 6, Block B-5, about midway between the Howe and Halley sandy lime pools east of the Hendricks Field, Winkler County, appears sure of making a producer since drilling in new hole at 3,124 feet where it is now fishing. It filled 1,000 feet with oil and later made a head of 50 bbls. from 3,110-17 feet, before losing tools which caused the present fishing job. A former mishap caused whipstocking from 2,712-54 feet, from which point the test has been redrilled to the present depth. It is east of Maxwell and others' No. 1 Oscar Clapp, in Section 37, Block 26, which is plugging back to test upper showings of oil after striking sulphur water at 3,487 feet. It may prove a connecting well between the two widely separated producing areas flanking the Hendricks Field to the east.

WICHITA FALLS DISTRICT

A new producing horizon has been discovered in a wildcat 2 miles northwest of the old Vernon Pool and 2 miles east of the Fluhman Pool in Wilbarger County, in Lawson and Leawell's No. 1 W. T. Waggoner estate in the NW cor. SW Section 99, Block 14, H.&T.C. Survey. It has a showing of oil in sand from 1,433-41 feet, but is now testing sand showing oil from 1,649-51 feet. Here it had 375 feet of oil in the hole with the bottom full of cavings. Casing is to be run, the hole cleaned and a test made. Dry holes are only one-half mile away, but the deeper horizon may lead to further drilling.

Reliance Oil & Refining Co., Jones and Stasney have a new discovery in the making in their No. 1 G. R. Davis in the northwest corner of the north 40 acres of the east 160 acres of T.&N.O. Survey No. 4. Sand showing oil was logged from 1,598-1,607 feet, and the test is estimated good for from 25 to 35 bbls. per day. It is 2 miles southwest of Roeser and Pendleton's production on the Morris and Buie ranch and 2 miles north and east of the T. K. Simmons and others' production on the Harvey land, and in Shackelford County.

There were 33 tests completed in the district during the week, 16 being abandoned, the rest producers. Among those abandoned was Baker and others' No. 1 Beverley in Tract 469, Block A, H.&T.C. Survey, near Crowell in Foard County, given up at 3,651 feet. This test was drilled in quest of production found in the sand from which Texas Co. is getting production in wells on the Les K. Johnson ranch on the west edge of the county.

Twenty-six locations were staked in the district this week. Production averaged 63,490 bbls. per day.

PANHANDLE DISTRICT

There were 16 locations staked in the Panhandle district and 17 producers completed, 11 in Gray County, two gas wells. The best well was Phillips Petroleum Co.'s No. 5 Lela in Section 49, Block 24, H.&G.N. Survey. Total depth is 2,530 feet, and the pay was logged at 2,455 feet. It made an initial production of 4,148 bbls. per day on a five-day proration test.

Production in the district averaged 61,870 bbls. per day during the week. There are 2,280 producing wells in the district.

COMPLETIONS IN PANHANDLE

Carson County

Stanolind Oil & Gas Co.'s No. 6 Cooper, total depth 3,160 feet, plugged back to 3,146 feet, top pay 3,092 feet, initial production 160 bbls. per day pumping.

Gray County

Bell Oil & Gas Co.'s No. 5-B Morse, top pay 2,390 feet, total depth 2,575 feet, shot 190 quarts from 2,394-2,440 feet, initial production 51 bbls. per day pumping. Cambrian Oil Co.'s No. 4 Webb, top pay 2,616 feet, total depth 2,560 feet, shot 110 quarts from 2,510-40 feet, initial production 130 bls. Danciger Oil & Refining Co.'s No. 13 Powell-Beck, top pay 2,878 feet, total depth 2,963 feet, initial production 591 bbls. per day pumping. Devore and Robinson's No. 1 Ayer, top pay 2,415 feet, total depth 2,548 feet, initial production 35 bbls. Plains Holding Co.'s No. 1 American National Bank of McLean, top pay 2,620 feet, total depth 2,977 feet, shot 50 quarts from 2,617-73 feet and 200 quarts from 2,538-2,635 feet, initial production 6 to 8 bbls. per day pumping. Stanolind Oil & Gas Co.'s No. 5-C Cobb, top pay 3,245 feet, total depth 3,330 feet, shot 310 quarts from 3,200-3,330 feet, initial production 394 bbls. per day pumping; No. 1 Kinzer, top pay 3,

(Continued on Page 77)

Wildcat Operations in West Texas

Week Ended February 15

ANDREWS COUNTY

Fuhrman Pet. Corp.'s No. 2-B Boner, 440 ft. from N and 1,320 ft. from E, Sec. 25, Blk. A-43.
Drlg. 3,570 ft.

Humble Oil & Ref. Co.'s No. 3 Means, 1,980 ft. from S and 3,300 ft. from W, Sec. 4, Blk. C-45.
Drlg. 4,038 ft.

Humble Oil & Ref. Co.'s No. 3 Means, 660 ft. from N and 1,997 ft. from E, Sec. 9, Blk. A135.
Drlg. 250 ft.

Stogner et al's No. 1 Richardson, 1,980 ft. N and 660 ft. E, Sec. 4, Blk. A-37, P.S.L.
Drlg. 1,100 ft.

York & Harper's No. 1 Hereford Stock Farms, C Labour 12, League 315, Parmer Co. School Lands.
Drlg. 1,880 ft.

BREWSTER COUNTY

F. C. Dodson's No. 1 Texas American Syndicate, 660 ft. from N and E, Sec. 66, Blk. 10, G.H.&S.A. Sur.
Ready to spud.

Joiner et al's No. 1 McIntyre, 253 ft. from S, 2,390 ft. from E of Sec. 21, Blk. 352, W. M. Mitchell Sur.
Trying to drill by bit 2,100 ft.

King & Franklin's No. 1 Gage Est., C Sec. 138, Blk. 32, G.H.&S.A. Sur.
T.D. 603 ft.; underreaming.

S. G. Smith's No. 1 Decie, 2,490 ft. from S and E, Sec. 7, Blk. 1.
Drlg. 685 ft.; show gas 670 ft.

COCHRAN COUNTY

Kelsey's No. 1 Slaughter, C Labour 36, League 150, R.C.S. Lands.
Derrick.

West Texas Development Co.'s No. 1 Slaughter, near C of Labour 53, League 149, Randall Co. School Lands.
Derrick

COKE COUNTY

Haggerty et al's No. 1 Gaston, 340 ft. from S and 654 ft. from W, Sec. 11, Jos. Young Sur. (old well deepening).
T.D. 2,560 ft.; rigging up.

CRANE COUNTY

Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
Drlg. 2,425 ft.

Gulf Prod. Co.'s No. 9 Waddell, C of NE, Sec. 11, Blk. B-28, P.S.L. Sur.
Drlg. 2,380 ft.

Wahlenmaier Pet. Corp.'s No. 1 Kloh, 330 ft. from S and 1,668 ft. from W, Sec. 33, Blk. 43, Twp. 4s, T.&P. Sur.
Drlg. 1,610 ft.

CROCKETT COUNTY

Eppenauer Drlg. Co.'s No. 1-C Powell, 1,600 ft. from S and 250 ft. from E, Sec. 52, Blk. BB, G.C.&S.F. Sur.
Drlg. 650 ft.; elev. 2,655 ft.

Leslie-Hillier et al's No. 1 Todd, 1,200 ft. N and 330 ft. E, Sec. 26, Blk. WX, G.C.& S.F. Sur.
S.D. 580 ft.

Humble Oil & Ref. Co.'s No. 1 Couch, C NW Sec. 3, Blk. QR, G.C.&S.F. Sur.
Drlg. 1,590 ft.

CULBERSON COUNTY

Anderson-Pritchard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur.
Drlg. 725 ft.

Miller Bros.' No. 1 fee, 1,900 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.
S.D. 2,145 ft.; show oil 2,107 ft.

Wood et al's No. 1 Hall, 250 ft. from S and 85 ft. from E, Sec. 11, Blk. 54½, 16 miles N of Van Horn, P.S.L. Sur.
S.D. 246 ft.

DAWSON COUNTY

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
S.D. 3,300 ft.

ECTOR COUNTY

Amerada Pet. Co. et al's No. 1 Holt, 1,986 ft. from S and E, Sec. 20, Blk. A.
T.D. 4,322 ft.; swabbing and cleaning out.

Atlantic Oil Prod. Co.'s No. 1 T. P. Land Trust, 440 ft. from N and W of SE Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur.
Fishing 4,010 ft.

Callahan et al's No. 1 Connell, 330 ft. from N and 990 ft. from W, Sec. 10, Blk. 30, Twp. 1s.
Location.

Empire Gas & Fuel Co.'s No. 1 Cummins, 440 ft. from S and E, Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur.
Cellar.

G Farley's No. 1 Connell, 990 ft. from S and 330 ft. from E, Sec. 11, Blk. B-16, P.S.L. Sur.
Drlg. 2,920 ft.

Gulf Prod. Co.'s No. 1 Goldsmith, C of NW,

(Continued on Page 78)

FOR LARGE VOLUME MEASUREMENT

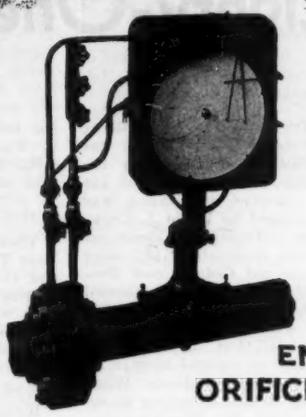
EMCO METERS

PITTSBURGH EQUITABLE METER CO.

MERCO NORDSTROM VALVE CO.

MAIN OFFICES PITTSBURGH, PA.

New York Columbia Chicago Memphis Kansas City Philadelphia Tulsa Houston Los Angeles Oakland



EMCO ORIFICE METER

Major working parts stainless steel to resist corrosion.

Shaft and bearing self-seating, eliminates necessity of adjustment.

All-welded manifold eliminates leakage.

Easily converted from one differential range to another at low cost.

EMCO LARGE CAPACITY METER

One piece body. Interchangeable parts.

Entire operating assembly can be replaced or repaired without removing meter from line.

EMCO PRESSED STEEL LARGE CAPACITY METER

Require less floor space per cubic foot than any other meter.

Rolling type diaphragms—accessible diaphragm drains.

Exclusive valve features.

Interchangeable parts.

NORDSTROM VALVES

Patented "Sealdport" lubrication—the Pioneer Lubricated Plug Valve. Assure positive shut-off. Lubricant seals plug against leaking. Non-sticking. Quick, easy, quarter-turn operation to open or close. Resist corrosion. Require less space. Reduce maintenance costs in every division of the Oil and Gas Industry.

EMCORECTOR

Installed on any high pressure positive gas meter gives DIRECT READING of volume corrected to any base pressure regardless of line pressure fluctuations. Eliminates expensive, time-taking chart calculations.

Limestone County Wildcat Is Holding Attention; Eighty-One Locations Staked in East Texas

By L. E. BREDBERG

DALLAS, Tex., Feb. 18.—One wildcat in the East Central Texas district has held considerable attention during the past two weeks since an oil and gas showing was reported and casing was set. This test, owned by David J. Crawford and others of Dallas and Mexia, on the Vol De Long farm, about 1½ miles southwest of the old Cedar Creek Pool and Mexia, in Limestone County, showed an estimated 640,000 feet of gas and a spray of salt water when tested at a total depth of 2,807 feet. The gas is to be killed and the test plugged back in an effort to make an oil producer. When tested it showed no oil, according to reports from the field. The Woodbine section was topped at 2,772-97 feet. It is in the Pedro Varella Survey.

Magnolia Petroleum staked location in the old Wortham Field for No. 28 Boyd, 300 feet northeast of No. 26, in Limestone County, and Pure Oil Co. staked location for No. 6-S Ross in the H. Ross Survey, in the Mexia Field, same county. The latter is being drilled for a gas supply for producing old wells, and the former for the shallow production found in that area. The Wortham test will be the first drilled in that area in several years.

Two Wildcats Abandoned

Two wildcats were abandoned. Humble Oil & Refining Co. gave up No. 1 Dvosky, in the J. A. Roffee Survey, 3 miles northeast of West, in McLennan County, at 750 feet. Elevation is 322 feet and it topped the Austin at 39 feet. Base of the Austin was logged at 322 feet and the Woodbine section was logged from 590-98 feet.

Bryant and Spear abandoned No. 1 Consumers Lignite Co. wildcat in the J. F. McMahon Survey, southeast of Alba in Wood County, at a total depth of 1,660 feet. Elevation is 419 feet. Another test is slated in this county by R. M. Skip Coleman and others of Fort Worth, in the center of the J. J. Junior farm in the James M. Moore Survey, south of Winnsboro and about 2 miles north of a test abandoned by McElreath and Suggett and others on the B. D. Holley farm, at a total depth of 4,638 feet. Gulf Production Co., Humble Oil & Refining Co. and others have taken spreads around the test.

Gillispie and others' (Walt Burress) No. 1 Oran, in the Jones Survey, Freestone County, approximately 2 miles north of Fairfield, logged base of the Austin chalk at 3,970 feet and is drilling below 4,125 feet. This is the only interesting test in the county, two others not having spudded.

Pioneer Exploration Co. and others' No. 1 Gentry, in the C. M. Walters Survey, 3 miles west of Athens, in Henderson County, is now coring below 3,825 feet.

VAN FIELD

According to findings of the Railroad Commission, average reservoir pressure of the Van Field, Van Zandt County, was reported at 866 pounds with variations from 1,183 pounds downward. Gordon Griffin, chief engineer of the commission, recommended the hearing today, that the method of allocation in that field be based on 50 per cent of the present basis, which involves acre feet of Woodbine sand, and 50 per cent on bottom hole pressure of individual well. Pure Oil Co., major producer in the field, approved of this plan.

Another well has been brought in on independents' holdings on the northeast side of the Van Field. Wise and Jackson have completed No. 2 Sanger, in the J. Walling Survey, at a total depth of 2,923 feet. It made 28 bbls. in 30 minutes and had to be shut in for storage.

EAST TEXAS FIELD

There were 81 locations staked in the East Texas Field this week, 36 in Gregg and 31 in Rusk County. The others were in Smith and Upshur Counties. Eighty-nine wells were completed, 41 in Gregg and 35 in Rusk County, the remainder in Smith and Upshur Counties. Three were completed swabbing and two were put on the pump before completing.

Rumor persists that Stanolind Oil & Gas Co. is dealing for the Yount-Lee properties in the East Texas Field, and that an inventory has been made of all properties. Yount-Lee has 264 producers in the field, and 2,182 proven acres, all in the heart of the field in Gregg County, and in the high pressure area. Yount-Lee also has a one-third interest in the Sun-Yount-Lee Pipe Line Co.'s 10-inch line to Sun City on the Gulf Coast.

Daily allowable production of the East Texas Field as of February 15 was 435,681 bbls. with new wells being completed at the rate of 11.2 wells per day to increase the daily allocation. The hourly potential is now 11,893,339 bbls., and there are 16,000 wells.

COMPLETIONS

Gregg County

Atlantic's No. 24 Turner, top sand 3,491 feet, total depth 3,560 feet, initial production 136 bbls. per hour. East Texas Petroleum Co.'s No. 10 T. J. Dunbar, top sand 3,632 feet, total depth 3,654 feet, initial production 28 bbls. in four hours, 2-inch tubing, by heads. Empire Gas & Fuel Co.'s No. 8 L. J. Rogers, top sand 3,565 feet, total depth 3,614 feet, initial production 32 bbls. in 15 minutes. Fain & McGaha's No. 14 A. Tooke, top sand 3,715 feet, total depth 3,770 feet, initial production 25 bbls. in 15 minutes. F.H.E. Oil Co.'s No. 17 B. C. Christian, top sand 3,667 feet, total depth 3,710 feet, initial production 90 bbls. hour, 2-inch tubing; No. 12 R. Christian, top sand 3,658 feet, total depth 3,675 feet, initial production 30 bbls. in 25 minutes. A.C.F. Oil Co.'s No. 5 E. Anderson, top sand 3,580 feet, total depth 3,655 feet, initial production 10 bbls. in 15 minutes, 2½-inch tubing. W. D. Ambrose and others' No. B-1 G. Jones, top sand 3,554 feet, total depth 3,600 feet, initial production 120 bbls. per hour.

Gulf Production Co.'s No. 24 S. C. Fishburn, top sand 3,482 feet, total depth 3,512 feet, initial production 17 bbls. in 15 minutes. Humble Oil & Refining Co.'s No. 34 W. R. Hughes, top sand 3,650 feet, total depth 3,675 feet, initial production 72 bbls. per hour. Jackson-Wise-Snedden's No. 6 R. Corbin, top sand 3,624 feet, total depth 3,654 feet, initial production 30 bbls. in 15 minutes, 2½-inch tubing. Magnolia Petroleum Co.'s No. 15 R. B. White, top sand 3,529 feet, total depth 3,554 feet, initial production 126 bbls. per hour. Mullendore & Berry's No. 5 M. Magrill, top sand 3,653-67 feet, total depth 3,668 feet, shale, initial production 30 bbls. in 20 minutes, 2½-inch tubing. Roeser & Pendleton's No. 5 Pete Hopkins, top sand 3,502 feet, total depth 3,538 feet, initial production 87 bbls. per hour.

Selby Oil & Gas Co.'s No. D-15 Snavely heirs, top sand 3,586 feet, total depth 3,598 feet, initial production 48 bbls. in 30 minutes. Sinclair Prairie's No. A-11 J. W. Aiken, top sand 3,570 feet, total depth 3,622 feet, initial production 35 bbls. in 15 minutes; No. 36 Moncrief, top sand 3,539 feet, total depth 3,580 feet, initial production 35 bbls. in 15 minutes; No. 37 Moncrief, top sand 3,561 feet, total depth 3,608 feet, initial production 30 bbls. in 15 minutes; No. 41 Moncrief, top sand 3,550 feet, total depth 3,585 feet, initial production 35 bbls. in 15 minutes. Sutton & Hawkins' No. 8 J. A. Whittaker, top sand 3,500 feet, total depth 3,520 feet, initial production 60 bbls. per hour. United E. & W.'s No. 2 E. L. Walker, top sand 3,565 feet, total depth 3,569 feet, initial production 100 bbls. in 12 hours by heads through casing. Yount Lee Oil Co.'s No. B-3 T. W. Lee, top sand 3,567-72 feet, total depth 3,575 feet, initial production 30 bbls. per hour, eleven-sixteenths inch choke. Atlantic's No. 15 L. P. Griffin, top sand 3,531 feet, total depth 3,595 feet, initial production 123 bbls. per hour.

Gulf Production Co.'s No. 39 C. Brown, top sand 3,504 feet, total depth 3,530 feet, initial production 70 bbls. per hour; No. 22 G. W. Culver, top sand 3,523 feet, total depth 3,568 feet, initial production 60 bbls. per hour; No. 71 S. Hilburn, top sand 3,557 feet, total depth 3,584 feet, initial production 81 bbls. per hour; No. 8 M. B. Hughey, top sand 3,499 feet, total depth 3,526 feet, initial production 30 bbls. in 30 minutes; No. 21 A. Muckelroy, top sand 3,562 feet, total depth 3,577 feet, initial production 84 bbls. per hour. Invincible Oil Co.'s No. 28 Weiss, top sand 3,605 feet, total depth 3,621 feet, initial production 120 bbls. per hour. Roger Lacy's No. 5 G. Davis, top sand 3,592 feet, total depth 3,607 feet, initial production 126 bbls. per hour, 1-inch choke. Magnolia Petroleum Co.'s No. 8 G. Davis, top sand 3,617 feet, total depth 3,640 feet, initial production 21 bbls. in 15 minutes, 1-inch choke; No. 30 J. R. Radford, top sand 3,655 feet, total depth 3,659 feet, initial production 96 bbls. per hour.

Hunter Co.'s (formerly Pelican Oil & Gas Co.'s) No. 10 Spear, top sand 3,637 feet, total depth 3,651 feet, initial production 30 bbls. in 30 minutes, 2-inch tubing. Quad Corp.'s No. A-6 Duncan, top sand 3,671 feet, total depth 3,679 feet, initial production 60 bbls. per hour. Shell Petroleum Corp.'s No. A-23 B. F. Laird, top sand 3,558 feet, total depth 3,586 feet, initial production 15 bbls. in 15 minutes. Sinclair Prairie's No. 40 M. T. Cole, top sand 3,566 feet, total depth 3,577 feet, initial production 30 bbls. in 30 minutes; No. 41 M. T. Cole, top sand 3,555 feet, total depth 3,568 feet, initial production 37 bbls. per hour; No. 42 M. T. Cole, top sand 3,568 feet, total depth 3,576 feet, initial production 30 bbls. in 30 minutes; No. 46 M. T. Cole, top sand 3,580 feet, total depth 3,602 feet, initial production 30 bbls. in 20 minutes. Texas Co.'s No. 25 Elder, top sand 3,620 feet, total depth 3,645 feet, initial production 70 bbls. per hour. Tide Water's No. 20 Bivens, top sand 3,623 feet, total depth 3,630 feet, initial production 15 bbls. in 15 minutes.

Rusk County

Brown-Tide Water's No. 6 Hindman, top sand 3,620 feet, total depth 3,633 feet, initial production 43 bbls. in 15 minutes. DeArman & McMillan's No. 8 W. Roberson, top sand 3,610 feet, top Geo. lime 3,711 feet, total depth 3,713 feet, lime, initial production 30 bbls. in 30 minutes, 2-inch tubing. Kirby Petroleum Co.'s No. 10 J. Reddic, top sand 3,610-17 feet, total depth 3,724 feet, shale, initial production 50 bbls. per hour, 2-inch tubing.

East Central Texas Wildcats

Week Ended February 16

ANDERSON COUNTY

Gulf Prod. Co.'s No. 1 M. J. Ross, 1,770 ft. from SW and 1,370 ft. from NW lines of Robt. Erwin Sur.
Elev. 484 ft.; drlg. 710 ft.

J. W. Luttes' No. 1 C. McKee, 2,640 ft. from N line of lease and survey and 330 ft. from W line of McKey 800-ac. tract.
Derrick.

Tide Water Oil Co. et al's No. 21-A Wells, 4,079 ft. N and 2,333 ft. W of lease, S. Edmondson Sur. (Trinity test).
Drlg. 4,462 ft.

Worsham's No. 1 Wathen, 1,400 ft. S and 467 ft. from E line of B. Towles Sur., NW of Cayuga.
Location.

BOWIE COUNTY

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Sur., 4 miles S of Red River.
Reaming at 100 ft.

CHEROKEE COUNTY

Jacksonville O. & G. Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-ac. tract out of Tankersley 104-ac. tract, 5 miles NE of Jacksonville on W side of railroad, J. Pineda Sur.
T.D. 752 ft.

E. M. Thomason et al's No. 1 Addis Estate, 250 ft. S of survey and 150 ft. E of railroad, J. T. Jones Sur., 6 miles NW Alto.
S.D. 3,370 ft.

Wilson Stubbs Oil Co.'s No. 1 Rowborta, 450 ft. from S line, 150 ft. from W line of 100-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur.
S.D. 1,553 ft.

ELLIS COUNTY

Beckner-Finley et al's No. 1 Coker, 2,900 varas along S line of grant from river and 1,700 varas N at R/A, R. De La Pena Sur.
S.D. 527 ft.

FREESTONE COUNTY

Amerada Pet. Corp.'s No. 1 Burk, 851 ft. S 125 ft. W of river, E. G. Rector Sur.
Derrick.

Burris' No. 1 R. J. Johnson, NE cor. of a 95.5-ac. tract, W. M. C. Jones Sur.
Top Austin 3,632 ft.; drlg. 3,825 ft.

Hoover et al's No. 1 McFall, 150 ft. S and W lines, S. Garrison Sur., E of Mexia.
Location.

GREGG COUNTY

O. T. Clark's No. 1 Williams, 2,100 ft. from S and 2,400 ft. from W of D. Hill Sur., 3 miles NE of Longview.
Top Austin 3,447 ft.; drlg. 3,540 ft.

HENDERSON COUNTY

Campbell and Chamberlain's No. 1 R. Ansley, 1,724 ft. W and 300 ft. S of SE cor. of M. Matthews Sur., N. H. T. Thompson Sur.
S.D. 1,000 ft.

Crosby and Pulp's No. 1 M. T. Dobbs, NW cor. of east Dobbs 100-ac. tract, 4 miles E of Malahoff and S of Railroad, George Aldrick Sur.
Bailing at 4,048 ft.

Pioneer Exploration Co.'s No. 1 Gentry, 300 ft. out of SE cor. of West Gentry tract in C. M. Walters Sur., 3 miles W of Athens.
Elev. 382 ft.; Pecan Gap 2,395-2,556 ft.; drlg. 2,850 ft.

HILL COUNTY

Humble O. & R. Co.'s No. 1 Holderman, 1,667 ft. from E and 750 ft. from N line of tract in C. Sullivant Sur., 1 mile W of Mt. Calm.
Location.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 300 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Gros. A. Caro Sur.
S.D. 1,455 ft.

HUNT COUNTY

Cauble & Thompson's No. 1 Reed, 330 ft. N of northerly NE cor. of C. B. Payne Sur., but in F. Thweatt Sur., 3 miles SE of Greenville.
Drlg. 2,265 ft.

Shawver et al's No. 1 Phillips, 1,200 ft. E of Winan's No. 1 Phillips, University Lands Sur., 2 miles W of Commerce.
S.D. 1,300 ft.

KAUFMAN COUNTY

Germany et al's No. 1 Clark, 951 ft. N and 1,000 ft. W of tract, S. Eden Sur.
S.D. 1,728 ft.

Murry & Emerson's No. 1 G. W. Martin, 1,660 ft. from W and 250 ft. from N of

(Continued on Page 78)

Lewis & Selby's No. 9 Pegues, top sand 3,565 feet, total depth 3,620 feet, shale. initial production 15 bbls. in 35 minutes. Magnolia Petroleum Co.'s No. 8 S. E. Brox, top sand 3,631 feet, total depth 3,720 feet, broken sand, initial production 24 bbls. in 15 minutes; No. 12 L. D. Crim, top sand 3,596 feet, total depth 3,640 feet, initial production 12 bbls. in 5 minutes, 1-inch choke. Overton Refining Co.'s No. 2 Rufus Jones, top sand 3,650 feet, total depth 3,694 feet, shale, initial production 18 bbls. per hour, 2-inch tubing. Retsall Drilling Co.'s No. B-1 W. Britton, top sand 3,623 feet, total depth 3,636 feet, initial production 20 bbls. in three hours by heads. Shell Petroleum Co.'s No. 15 Moore, top sand 3,688 feet, total depth 3,694 feet, initial production 17 bbls. in 15 minutes.

Standtex Oil Co.'s No. 4 L. Morris, top sand 3,590 feet, total depth 3,630 feet, initial production 75 bbls. per hour. Tide Water Oil Co.'s No. B-2 J. S. Bean, top sand 3,610 feet, total depth 3,672 feet, initial production 8 bbls. in 10 minutes, 1-inch choke. Grady Vaughn and others' No. 1 J. T. Sexton, top sand 3,610-55 feet, total depth 3,694 feet, shale, initial production 20 bbls. per hour, 2-inch tubing. Blackwell Oil & Gas Co.'s No. 8 W. P. Moore, top sand 3,628-55 feet, total depth 3,655 feet, initial production 30 bbls. in 15 minutes. Bristol-White-Duncan's No. 1 J. O. Tucker, top sand 3,612 feet, total depth 3,628 feet, initial production 75 bbls. per hour. W. E. Brown and others' No. 1 Frederick, top sand 3,527 feet, total depth 3,612 feet, initial production 20 bbls. per hour, swabbing. Slaughter and others' (formerly R. H. Dearing's) No. 1 Maxwell, top sand 3,518 feet, initial production 20 bbls. per hour, swabbing. Delta Drilling Co.'s No. 6 J. H. Henson, top sand 3,504 feet, total depth 3,554 feet, lime, initial production 20 bbls. per hour swabbing. R. E. Fair, Inc.'s No. A-10 B. F. Maxwell, top sand 3,644 feet, total depth 3,714 feet, initial production 30 bbls. in 30 minutes.

Fair & Thompson's No. 3 Deason, top sand 3,600 feet, total depth 3,652 feet, initial production 22 bbls. per hour; No. B-4 Wiley, top sand 3,576 feet, total depth 3,626 feet, initial production 15 bbls. per hour, pumping. C. B. R. Oil Co.'s No. 11 L. Harmon, top sand 3,767 feet. total depth 3,830 feet, initial production 45 bbls. in 30 minutes. Humble Oil & Refining Co.'s No. C-12 Ida Holt, top sand 3,745-70 feet, total depth 3,810 feet, shale, initial production 55 bbls. per hour; No. 14 C. Pilgreen, top sand 3,696-3,707 feet, total depth 3,788 feet, shale, initial production 64 bbls. hour; No. 4 A. Simmons, top sand 3,733-54 feet, total depth 3,797 feet, shale, initial production 55 bbls. per hour; No. 10 C. W. Wilson, top sand 3,604-22 feet, total depth 3,707 feet, shale, initial production 51 bbls. per hour; No. B-15 H. White, top sand 3,631-41 feet, total depth 3,733 feet, shale, initial production 26 bbls. per hour. Hunt Production Co.'s No. C-19 Fair, top sand 3,619 feet, total depth 3,645 feet, initial production 31 bbls. in 13 minutes.

International Oil Co.'s No. 7 L. P. Pinkston, top sand 3,640 feet, total depth 3,680 feet, initial production 75 bbls. per hour. Jenkins Oil Co.'s No. 25 Jobe, top sand 3,550 feet, total depth 3,630 feet, lime, initial protection 100 bbls. in four hours by heads. Marathon Oil Co.'s No. 14 Clay heirs, top sand 3,668 feet, total depth 3,734 feet, initial production 20 bbls. per hour, swabbing; No. 13 Graham, top sand 3,642 feet, total depth 3,656 feet, initial production 72 bbls. per hour. W. R. Learing's (formerly Slaughter and others') No. B-2 W. H. Frederick, top sand 3,511 feet, total depth 3,581 feet, initial production 28 bbls. per hour, pumping; No. B-1 Frederick, top sand 3,511 feet, total depth 3,585 feet, initial production 20 bbls. per hour, pumping. Texas Co.'s No. 7 Stone, total depth 3,678 feet, top sand 3,624 feet, initial production 65 bbls. per hour, 2-inch tubing. Tex-Jersey Corp.'s No. 3 G. W. Eaton, top sand 3,747 feet, total depth 3,796 feet, initial production 65 bbls. per hour. Hunt Production Co.'s No. B-13 Fair, top sand 3,673 feet, total depth 3,685 feet, initial production 80 bbls. per hour.

Pointer's No. 4 T. O. Wright, top sand 3,665 feet, total depth 3,672 feet, initial production 44 bbls. in 30 minutes. Sinclair Prairie's No. A-4 E. E. Moore, top sand 3,733 feet, total depth 3,739 feet, initial production 15 bbls. in 30 minutes; No. 19 D. Wright, top sand 3,748 feet, total depth 3,754 feet, initial production 10 bbls. in 10 minutes; No. 20 D. Wright, top sand 3,733 feet, total depth 3,740 feet, initial production 30 bbls. in 15 minutes; No. 11 R. G. Wright, top sand 3,513 feet, total depth 3,734 feet, initial production 30 bbls. in 15 minutes; No. 12 R. G. Wright, top sand 3,698 feet, total depth 3,708 feet, initial production 15 bbls. in 15 minutes; No. 13 R. G. Wright, top sand 3,698 feet, total depth 3,708 feet, initial production 30 bbls. in 15 minutes; No. 14 R. G. Wright, top sand 3,683 feet, total depth 3,693 feet, initial production 30 bbls. in 15 minutes. Texas Co.'s No. 13 J. W. Wilson, top sand 3,650 feet, total depth 3,666 feet, initial production 29 bbls. in 30 minutes.

Upshur County

Magnolia's No. 25 J. W. Free, top sand 3,630 feet, total depth 3,640 feet, initial production 115 bbls. per hour. Oils, Inc.'s No. 13 A. J. Sanders, top sand 3,598 feet, total depth 3,614 feet, initial production 35 bbls. per hour. Shell Petroleum Co.'s No. 17 Landers, top sand 3,696 feet, total depth 3,716 feet, initial production 20 bbls. in 30 minutes.

McClennan County

Humble Oil & Refining Co.'s No. 1 Dvosky, dry and abandoned 750 feet, elevation 322 feet, top Austin 39 feet, base Austin 322 feet, Woodbine 590-98 feet.

Wood County

Bryant & Spear's No. 1 Consumers Lignite Co., dry and abandoned 1,660 feet, elevation 419 feet.

West Texas Fields

(Continued from Page 74)

235 feet, total depth 3,301 feet, initial production 244 bbls. per day pumping. Texas Co.'s No. 1-D Taylor, total depth 3,183 feet, plugged back to 3,105 feet, bridged back to 2,650 feet, initial production 3,800,000 feet of gas. Warner Oil Co.'s No. 2 Webb, total depth 3,040 feet, plugged back to 2,287 feet, shot three times, initial production 4,295,000 feet of gas. Staco Oil Co.'s No. 1-B Webb-Marathon, top pay 2,577 feet, total depth 2,618 feet, shot and made 14 bbls. oil and 62 bbls. of water pumping.

Hutchinson County

Stanolind Oil & Gas Co.'s No. 3 Watkins, top pay 2,918 feet, total depth 3,003 feet, shot 200 quarts from 2,915-96 feet, initial production 122 bbls. per day pumping.

Wheeler County

Alma Oil Co.'s No. 8 Johnson, top pay 2,355 feet, total depth 2,494 feet, initial production 20 bbls. Bell Oil & Gas Co.'s No. 2 Plummer, top pay 2,483 feet, total depth 2,519 feet, plugged back to 2,500 feet, initial production 125 bbls. Phillips Petroleum Co.'s No. 5 Lela, top pay 2,455 feet, total depth 2,530 feet, initial production 4,148 bbls. Texas Co.'s No. 3 Carwile, top pay 2,448 feet, total depth 2,515 feet, initial production 2,918 bbls.

COMPLETIONS IN WEST TEXAS

Andrews County

Humble Oil & Refining Co.'s No. 2 Means, top pay 4,225 feet, total depth 4,558 feet, initial production 5 bbls. per hour, elevation 3,154 feet.

Crane County

Gulf Production Co.'s No. 108 McElroy, total depth 2,901 feet, shot with 300 quarts from 2,700-2,885 feet, initial production 1,044 bbls. per day.

Pecos County

Shell Petroleum Corp.'s No. 1-A Carlson-University, dry and abandoned at 2,035 feet. Stanolind Oil & Gas Co.'s No. 10-B Tippett, total depth 510 feet, initial production 705 bbls. per day, pumping.

Ward County

Atlantic Oil Producing Co.'s No. 4-A Bennett, top pay 2,305 feet, total depth 2,548 feet, shot with 100 quarts from 2,374-2,413 feet, initial production 75 bbls.; No. 2-B Bennett, top pay 2,312 feet, total depth 2,553 feet, initial production 153 bbls. California Co.'s No. 27 Durgin, top pay 2,424 feet, total depth 2,562 feet, initial production 341 bbls.; No. 15 York, top pay 2,384 feet, total depth 2,531 feet, initial production 160 bbls. Gulf Production Co.'s No. 38 Hutchings, top pay 2,505 feet, total depth 2,758 feet, initial production 365 bbls. Westbrook and Caton's No. 4 Bennet, top pay 2,272 feet, total depth 2,535 feet, initial production 460 bbls.

Winkler County

Magnolia Petroleum Co.'s No. 5 Walton, top pay 2,827 feet, total depth 2,973 feet, initial production 711 bbls. Sinclair Prairie Oil Co.'s No. 2 Cummins, top pay 2,880 feet, total depth 2,970 feet, initial production 426 bbls.

COMPLETIONS IN WICHITA FALLS DISTRICT

Archer County

Cockburn's No. 7 Andrews, top pay 1,387 feet, total depth 1,403 feet, initial production 20 bbls. Cullum & Alexander's No. 13 Falls-Gulf, top pay 1,096 feet, total depth 1,120 feet, initial production 75 bbls. Cullum's No. 23 Falls-Ellis, top pay 1,136 feet, total depth 1,150 feet, initial production 150 bbls. Golding & Cochran's No. 1-B Richardson, dry and abandoned at 1,298 feet. Hamilton's No. 18 Cartwright, dry and abandoned at 1,145 feet; No. 25 Coffield, top pay 1,180 feet, total depth 1,197 feet, initial production 200 bbls. Mrs. H. B. Madden's No. 1 Richardson, dry and abandoned at 1,351 feet. Maxson and Panhandle Refining Co.'s No. 33-B Green, top pay 1,094 feet, total depth 1,102 feet, initial production 35 bbls. Perkins & Cullum's No. 136 Falls County, top pay 1,115, total depth 1,140 feet, initial production 60 bbls. Petroleum Producers Co.'s No. 8 Harmonson, top pay 952 feet, total depth 965 feet, initial production 150 bbls.; No. 12 Harmonson, top pay 949 feet, total depth 968 feet, initial production 140 bbls. Sinclair Prairie Oil Co.'s No. 7 Falls-Boyles, temporarily abandoned at 1,126 feet. Womack Oil Co.'s No. 8 Perkins, dry and abandoned at 1,504 feet.

Cooke County

Petroleum Producers Co.'s No. 4 Andress Brothers, dry and abandoned at 1,462 feet; No. 5 Andress Brothers, top pay 1,261 feet, total depth 1,270 feet, initial production 1,800 bbls. Texas Co.'s No. 3 Trubenbach, dry and abandoned at 1,582 feet.

Foard County

Baker and others' No. 1 Beverly, dry and abandoned at 3,651 feet.

Montague County

Leah & McCall's No. 2 Davenport, top pay 1,663 feet, total depth 1,673 feet, initial production 300 bbls. of oil and 16 bbls. of water per day, pumping.

Wichita County

Browning's No. 1 Jackson, dry and abandoned at 755 feet. Burns' No. 5 Allen and Kemp, dry and abandoned at 1,774 feet. Burns and Long's No. 23-D Allen & Kemp, top pay 1,756 feet, total depth 1,758 feet, initial production 10 bbls. Petroleum Producers Co.'s No. 4 Munger, dry and abandoned at 1,780 feet. Texas Co.'s No. 16 Allen & Kemp, top pay 455 feet, total depth 466 feet, initial production 18 bbls.

Young County

Baker Oils, Inc.'s No. 1 Wells, dry and abandoned at 780 feet. Bridwell Oil Co.'s No. 4 Daniel, dry and abandoned at 937 feet. Mook-Texas Oil Co.'s No. 1 Jeffery, top pay 4,009 feet, total depth 4,016 feet, initial production 52 bbls. Moran and others' No. 7 Howard, top pay 898 feet, total depth 906 feet, initial production 10 bbls. Rathke Oil Co.'s No. 6 Graham, dry and abandoned at 973 feet; No. 4 Logan, top pay 561 feet, total depth 573 feet, initial production 10 bbls. Texas Co.'s No. 6-B Finch, top pay 664 feet, total depth 675 feet, initial production 160 bbls. Stafford Oil Co.'s No. 2 Sullivan, dry and abandoned at 588 feet.

Wilbarger County

Lido Oil Co.'s No. 10 Waggoner, top pay 2,433 feet, total depth 2,462 feet, initial production 14 bbls. of oil and 47 bbls. of water per day.

WEST CENTRAL TEXAS COMPLETIONS

Brown County

Sher-Ritt Oil Co.'s No. 2 Scott, dry and abandoned at 1,904 feet. Moore & Son, Inc.'s No. 1 Wilson, temporarily abandoned at 1,050 feet.

Callahan County

Anzac Oil Corp. and others' No. 1 Harris, dry and abandoned at 2,492 feet. Graham's No. 1 Clark and others, dry and abandoned at 792 feet. Imholtz and others' No. 1 Seale estate, dry and abandoned at 1,100 feet.

Coleman County

Anzac Oil Corp.'s No. 2 Morris, total depth 2,235 feet, initial production 8,000,000 feet of gas. Engle and others' No. 16 Bartholomew, total depth 1,455 feet, initial production 150 bbls. of oil.

Palo Pinto County

Conway and International Petroleum Corp.'s No. 2 Carter, top pay 1,380 feet, total depth 1,392 feet, initial production 10 bbls. International Petroleum Corp.'s No. 5 Costello, total depth 1,405 feet, initial production 20 bbls.; No. 2 Ritchie, dry and abandoned at 1,775 feet. Montgomery and others' No. 1 Costello, dry and abandoned at 2,500 feet.

Shackelford County

Albany Oil Co. and others' No. 2-B Jeter, dry and abandoned 1,194 feet. Gorsuch's No. 1 fee, dry and abandoned 1,650 feet. Hayes and others' No. 1 Williams, dry and abandoned 1,925 feet. Hope Oil & Gas Co. and others' No. 1 Reynolds, total depth 1,077 feet, initial production 9,500,000 feet. Perkins' No. 1 Smalley, dry and abandoned 1,050 feet. Rosser & Pendleton's No. 1-B Cook estate, dry and abandoned 1,290 feet. Sedwick and others' No. 1 Cloud, dry and abandoned 1,138 feet. States Oil Corp.'s No. 3 Nail, total depth 1,505 feet, plugged back to 1,420 feet, initial production 10 bbls. Tannehill and others' No. 36 Newell, dry and abandoned 708 feet.

Throckmorton County

Cochran's No. 1 Taylor, dry and abandoned 780 feet.

March Crude Allowable Reduced 5,800 Bbls. Daily

A decrease of 5,800 bbls. daily in the national allowable crude oil reduction was authorized for March in an order announced by Oil Administrator Ickes. March's daily production was placed at 2,520,300 bbls., compared with 2,526,100 bbls. daily authorized for February.

The Bureau of Mines and the Petroleum Administrative Board, in recommending the allowable, set forth that the slight decrease was occasioned by the comparable decrease in gasoline production necessary to meet current demand to provide adequate inventory conditions.

The largest decrease was authorized for Texas, cut 11,600 bbls. to 1,020,100.

Arkansas, off 100 to 31,900; California, up 4,000 to 492,600; Colorado, unchanged at 3,500; Illinois, off 500 to 11,200; Indiana, unchanged at 2,200; Kansas, up 1,100 to 139,700; Kentucky, down 100 to 14,700; Louisiana, up 1,000 to 110,500; Michigan, up 1,600 to 31,600; Montana, unchanged at 9,500; New Mexico, down 100 to 49,300; New York, up 1,000 to 11,300; Ohio, down 200 to 11,500; Oklahoma, down 6,100 to 491,000; Pennsylvania, up 4,300 to 43,300; West Virginia, up 300 to 11,300; and Wyoming, down 400 to 35,100.

West Texas Wildcats

(Continued from Page 74)

Sec. 10, Blk. 44, Twp. 1s, T.&P. Sur.
T.D. 675 ft.; hole caving.
International Pet. Corp.'s No. 1 Cowden, 660 ft. from S and E, Sec. 35, Blk. 44, Twp. 2s. T.&P. Sur.
T.D. 1,345 ft.; set csg.
Landreth Prod. Co.'s No. 1 Clarence Scherbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n, T.&P. Sur.
T.D. 4,236 ft.; plugged back to 4,186 ft.; S.D.
Penrose et al's No. 1 Kloh & Rumsey, 2,310 ft. from S and E, Sec. 31, Blk. 45, Twp. 1s, T.&P. Sur.
Drlg. 1,000 ft.
Phillips Pet. Co.'s No. 1 Scharbauer, 990 ft. from S and 330 ft. from E, Sec. 16, Blk. B-15.
S.D. 2,290 ft.

EDWARDS COUNTY

Harry Adams' No. 1 Holman, 1,650 ft. from N and 330 ft. from E, Sec. 22, C.C.S.D. &R.G.N.G. Sur.
Show oil 520-25 ft.; T.D. 602 ft.

EL PASO COUNTY

Mesa Oil Co.'s No. 1 Coronado Valley.
S.D. 1,415 ft.

FISHER COUNTY

Merry Bros. and Perrini's No. 1 Howard. 1,320 ft. from N and 660 ft. from E, Sec. 18C, Blk. 2, H.&T.C. Sur.
T.P. 3,665 ft.; T.D. 3,670 ft.; 3,000 ft. fluid in hole, 50 per cent water; underreaming csg.
Roeser & Pendleton's No. 2 Hill, 2,310 ft. from N and 330 ft. from E, Sec. 203, B.B.B.&C. Sur.
T.D. 3,128 ft.; putting on pump.

GLASSCOCK COUNTY

John I. Moore et al's No. 1 McDowell, 2,310 ft. from S and 2,297 ft. from E, Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur.
Machine.
John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
S.D. 9,247 ft.

HOWARD COUNTY

C. Henson et al's No. 1 B. Scott, 330 ft. from N and 1,650 ft. from E, Sec. 93, Blk. 29, T.&P. Sur.
S.D. 1,010 ft.
Slagel's No. 1 Foster, 990 ft. from S and 330 ft. from W, Sec. 43, Blk. 29.
Shut down.

JEFF DAVIS COUNTY

C. M. Joiner's No. 1 Jones & Goffield, 770 ft. from N and 1,322 ft. from E, Sec. 8, Blk. 3, H.&T.C. Sur.
Drlg. 360 ft.

JONES COUNTY

Campbell et al's No. 1 Rowell, in E half of W half, Sec. 6, T.&P. Sur.
Drlg. 315 ft.
Campbell et al's No. 1 Enevill, 1,400 ft. from N and 270 ft. from W, Sec. 2, M.E.&P. Sur., ¼ mile S of Anson.
S.D. 1,960 ft.
Cal-Tex Oil Co.'s No. 1 Smith, 1,400 ft. from S and 2,000 ft. from E, Sec. 25, Blk. 19, T.&P. Sur.
S.D. 1,120 ft.
Dr. C. E. Johnson's No. 1 Young, 1,800 ft. from N and 750 ft. from W of SE 200 acres of B. Travenio Sur.
S.D. 1,070 ft.
McKenzie & Bland's No. 1 First Nat'l Bank of Anson, 300 ft. from S and E, Sec. 53, D.&S.A. Sur.
Spudded.
Owen et al's No. 1 Johnson & Dunwoody, 3,780 ft. from S and 330 ft. from W, Sec. 6, Blk. 17, T.&P. Sur.
Spudded and S.D.
Richards et al's No. 1 Ransom, 200 ft. from N and E, Sec. 244, E. M. Clopton Sur.
S.D. 750 ft.
Bill Rhodes' No. 1 Wood, 300 ft. from S and E, Sec. 2, Blk. 2, T.&N.O. Sur.
T.P. 1,942 ft.; T.D. 1,960 ft.; 210 ft. oil in hole in nine hours.
Texas Inland Oil Co.'s No. 1-A Sayles, 55 ft. W and 160 ft. N of NW cor. of Lot 1, but in Lot 7, Blk. 20, T.&P. Sur.
T.D. 1,880 ft.

LOVING COUNTY

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
S.D. 2,030 ft.
Mason Oil Co.'s No. 1 Kyle, 1,980 ft. from S and E, Sec. 22, Blk. 55, Twp. 1, T.&P. Sur.
Cellar.

LYNN COUNTY

Hart Oil Co.'s No. 1 Edwards, 330 ft. from N and 300 ft. from W of SE Sec. 39, L.&S.V. Sur.
S.D. 3,137 ft.

MARTIN COUNTY

Wright & Scott's No. 1 Flannigan, 330 ft. N and E, Sec. 32, Blk. 37, Twp. 1s, T.&P. Sur.
Spudded and S.D.

MITCHELL COUNTY

Harry Adams' No. 1 Mackey, 1,980 ft. from N and 660 ft. from W, Sec. 13, Blk. 29, Twp. 1n, T.&P. Sur.
Drlg. 2,802 ft.
Sawtell & Grueber's No. 1 Morrison
Drlg. 1,050 ft.

McCULLOCH COUNTY

Cardinal Oil Co.'s No. 4 White Baker, 270 ft. from N and 1,963 ft. from E, Dewey Sur.
Location.
Cardinal Oil Co.'s No. 2 White Baker, 1,302 ft. from N and 1,963 ft. from E, Sec. 2, W. Dewey Sur.
Drlg. 550 ft.
Cardinal Oil Co.'s No. 3 White Baker, 1,302 ft. from N and 1,030 ft. from E, Sec. 2, W. Dewey Sur.
Location.
Goggins' No. 1 Craven Estate, 1,390 ft. from S and 2,480 ft. from W, Gus Dreiss Sur.
Drlg. 200 ft.
Honea et al's No. 1 Cox, 450 ft. from S and 150 ft. from E, David Pope Sur.
Drlg. 690 ft.
Miller et al's No. 1 Black, 150 ft. from N and 175 ft. from E, Sur. 290, H.&T.C. Sur., 3 miles E of Placid.
Drlg. 310 ft.
Skaggs & Brewer's No. 1 Dunn, 190 ft. from S and 570 ft. from E, Sec. 951, T. L. Hartig Sur.
Drlg. 350 ft.

PECOS COUNTY

Cardinal Oil Co.'s No. 1 White & Baker, 2,310 ft. from S and 330 ft. from W, Sec. 51, Blk. Z, T.C. Sur.
Location.
Gulf Prod. Co.'s No. 4 White & Baker, 2,310 ft. from N and 330 ft. from E, Sec. 46, Blk. Z, T.C. Sur.
T.D. 720 ft.; underreaming csg.
Messenger's No. 1 Dr. Sibley, 4,920 ft. from S and 990 ft. from W, Sec. 6, Blk. 9, H.&G.N. Sur.
Location.
Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 46, Twp. 9, T.&P. Sur.
Drlg. 1,680 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 17-C University, 2,402 ft. from S and 2,240 ft. from W, Sec. 25, Blk. 9, Location.
Dobbs' No. 1 Friend, 2,310 ft. from S and 660 ft. from W of Blk. 3, Wm. Allen Sur., 3 or 4 miles S of Big Lake.
Drlg. 910 ft.
Skelly Oil Co.'s No. 1-D H. S. Grayson, 1,980 ft. from N line and 660 ft. from W line of Sec. 33, Blk. 3, University Land Sur.
S.D. 9,439 ft.; cleaning out and lowering csg. to bottom of hole.

REEVES COUNTY

J. E. Cunningham's No. 1 Altman, 2,810 ft. from N line and 1,980 ft. from E line of Sec. 1, C. C. Wyatt Sur.
S.D. 3,672 ft.
Herbert Oil Co.'s No. 1 Williams & Walker, 5,280 ft. from S and 1,320 ft. from E, Sec. 17, Blk. 6, H.&G.N. Sur.
Derrick.

RUNNELS COUNTY

Dennis et al's No. 1 Wash, 550 ft. from N and 660 ft. from E of W half, Sec. 123, E.T.R.R. Sur.
Spudded and S.D.
Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100.
S.D. 2,507 ft.
R. Wells' No. 1 James, 396 ft. from N and 330 ft. from E of James tract in Sec. 14, D. Diaz Sur.
S.D. 1,100 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
To test; T.D. 5,987 ft.
W. C. Proctor et al's No. 1 Judkins & Spencer, 1,320 ft. from S and W of W. W. Russell grant.
Rigged up; moved off tools.

SCURRY COUNTY

Coffield & Guthrie's No. 1 Holliday, 2,310 ft. from N and 330 ft. from W, Sec. 120, Blk. 97, H.&T.C. Sur.
Cleaning out 3,967 ft.
McLaughlin's No. 1 Allen, 1,331 ft. from N and 1,328 ft. from E, Sec. 298, Blk. 97.
S.D. 485 ft.

STERLING COUNTY

Merry Bros. & Perrini's No. 1 Standsberry. 1,980 ft. from N and E, Sec. 30, Blk. 30, W.&N.W. Sur.
Drlg. 1,520 ft.

STONEWALL COUNTY

Merry Bros. and Perrini et al's No. 1 Williams, C SW of SW Sec. 6, Blk. C, A.B. &M. Sur.
S.D. 3,000 ft.

SUTTON COUNTY

Teas et al's No. 1 Mower, 1,980 ft. from S and W of Sec. 39, Blk. 5, T.W.&N.G. Sur.
T.D. 3,398 ft.; tools hung.

TAYLOR COUNTY

Dunnigan Bros. et al's No. 3 Hunter, 225 ft. from S and 750 ft. from W, Sub. 14, Willis Sur.
T.P. 2,378 ft.; T.D. 2,425 ft.; plugged back to 2,422 ft. and shot with 40 qts. 2,366-76 ft.; will make small pumper.
Meredith et al's No. 1 Pittle, 330 ft. from N and E of Sec. 37, Blk. 19, T.&P. Sur., 1 mile NE of Trent.
Location.

TERRELL COUNTY

W. A. Sudderth's No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur.
S.D. 5,635 ft.

UPTON COUNTY

Baldridge Oil Co.'s No. 1 S. Peck, 440 ft. from S and E, Sec. 39, Blk. 41, Twp. 4s, T.&P. Sur.
Material.
Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur.
Drlg. 11,110 ft.
Humble Oil & Ref. Co.'s No. 1 Pollock, C of NW, Sec. 4, Blk. M.
Elev. 2,758 ft.; set csg. 340 ft.
King Mountain Pet. Co.'s No. 1 Sherk, 330 ft. from S and W, Sec. 29, Blk. 1, M.K.&T. Sur.
Drlg. 1,250 ft.
Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur.
S.D. 2,040 ft.; 1,700 ft. oil in hole.

WARD COUNTY

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.
S.D. 1,800 ft.
Atlantic Oil Prod. Co.'s No. 1 Monroe, 566 ft. SW and 350 ft. SE of E cor. of J. C. Russell Sur. No. 3, but in Sec. 2, J. V. Border's Sur.
Drlg. 1,955 ft.
Bradford et al's No. 1 E. R. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, H.&T.C. Sur.
S.D. 760 ft.
Caprito's No. 1 Hardage & Wilson, 2,310 ft. from NE and 990 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur.
Material.
Cook Drlg. Co.'s No. 1 Wood, 330 ft. from NW and SW, Sec. 5, W. F. Stewart Sur.
T.D. 2,548 ft.
Gulf Prod. Co.'s No. 52 O'Brien.
Drlg. 2,987 ft.
Gulf Prod. Co.'s No. 55 O'Brien, 1,650 ft. N and 330 ft. from E, Sec. 18, Blk. F. Derrick.
Postellio & Caprito's No. 1 Purcell, 330 ft from NE and 990 ft. from NW, Sec. 17, Blk. 34, H.&T.C. Sur.
Fishing 2,775 ft.
Rector Oil Co.'s No. 1 Monroe, 660 ft. from SE and NE, Sec. 2, Blk. 1, W.&N.W. Sur.
Drlg. 2,045 ft.
Sageland Oil Corp.'s No. 2 Pure-Bennett. 1,650 ft. from NW and 2,310 ft. from SW S.D. 220 ft.
Jerry Sines' No. 1 Brown, 330 ft. from NW and NE, Sec. 13, Blk. 5, H.&T.C. Sur.
Location.
West Texas O. & R. Co.'s No. 1-C University, 330 ft. from N and E, Sec. 6, Blk. 16. S.D. 900 ft.

WINKLER COUNTY

Barnsdall Oil Co.'s No. 1 Brown & Aultman, 3,310 ft. from N and W, Sec. 6, Blk. 5, P.S.L. Sur.
Drlg. 700 ft.
Harry Adams' No. 2 Scarborough, 990 ft. from N line and 990 ft. from W line, Sec. 3, Blk. 77, P.S.L. Sur.
Location.
Humble Oil & Ref. Co.'s No. 2-A Walton, 660 ft. from S and W, Sec. 48, Blk. 26. Location.
Jeffries et al's No. 1 Brown & Altman, 2,310 ft. from S and W, Sec. 6, Blk. B-5 T.D. 3,124 ft.; fishing; hole filled 1,000 ft. with oil in one day.
Dr. Jeffries et al's No. 1 Underwood, 330 ft. from S and 2,310 ft. from E, Sec. 24, Blk B-3.
S.D. 800 ft.
Magnolia Pet. Co.'s No. 6 Watton, 330 ft. from S and 1,650 ft. from W, Sec. 1, Blk. 26, P.S.L. Sur.
Cellar.
J. C. Maxwell's No. 1 Clapp, 2,310 ft. from N and 330 ft. from E, Sec. 27, Blk. 26, P.S.L. Sur.
T.D. 3,487 ft.; plugged back.
Maxwell's No. 1 Daugherty.
T.D. 2,959 ft.; testing; made 9 bbls. per hour through casing.
R. S. Mathews et al's No. 1 Evans, 1,320 ft. from N line and 1,320 ft. from W line. Sec. 46, Blk. 73, P.S.L. Sur.
S.D. 110 ft.
Mid-Continent Pet. Corp.'s No. 2 Howe, 1,650 ft. from N and 330 ft. from W, Sec. 12, Blk. 26.
T.D. 2,735 ft.; set csg.
Richardson's No. 1 Walton, 1,010 ft. from S and 330 ft. from W, Sec. 1, Blk. B-3.
Drlg. 810 ft.
Sid Richardson's No. 1 Hill, 1,980 ft. from E line, 660 ft. from S line, Sec. 18, Blk. B-11, P.S.L. Sur.
T.D. 3,846 ft.; plugged back to 3,181 ft.; water apparently shut off.
Sayre Oil Co.'s No. 1 Leck, 330 ft. from S and E, Sec. 2, Blk. 26, P.S.L. Sur.
Fishing 2,737 ft.; 10,000,000 ft. gas here.
Sayre Oil Co.'s No. 2 Howe, 330 ft. from N and W, Sec. 12, Blk. 26, P.S.L. Sur.
Location.
Skelly Oil Co.'s No. 2 Halley, 1,320 ft. from N and 2,200 ft. from E, Sec. 25, Blk. B-11, P.S.L. Sur.
T.P. 2,850 ft.; T.D. 3,072 ft.; fishing tools.
Sinclair Oil Co.'s No. 1 Lowett, 330 ft. from N and E, Sec. 36, Blk. 26, P.S.L. Sur.
Cellar and pits.
Sun Oil Co.'s No. 1 Halley, 2,200 ft. from N and 440 ft. from E, Sec. 24, Blk. B-12, P.S.L. Sur.
Drlg. 1,202 ft.

Texas Panhandle Wildcats

Week Ending February 15

CARSON COUNTY

McClintock et al's No. 1 Jordan, 660 ft. N, 413 ft. W Sec. 105, Blk. 4, I.&G.N. Sur.
Drlg. 3,102 ft.; S.O. 2,985 ft.
Phillips Pet. Co.'s No. 1 Cooper, 330 ft. S and E, Sec. 4, Blk. 9, I.&G.N. Sur.
T.D. 2,940 ft.; Pulling big pipe.

CHILDRESS COUNTY

Humble O. & R. Co.'s No. 1-A Smith, 1,288 ft. S and 1,407 ft. W, Sec. 14, Blk. 9, H.&G.N. Sur.
T.D. 532 ft.; repairing rig.
Watchorn O. & G. Co.'s No. 1 Low, C NW SE¼ Sec. 417, W.&N.W. Sur., S of Kirkland.
Ready to spud.

COLLINGSWORTH COUNTY

Andrews & Kerr's No. 1 Gideon-Bell, C NW NE Sec. 6, Blk. 13, H.&G.N. Sur.
T.D. 2,201 ft.; P.B. to 2,050 ft.; to set S.D. 2,117 ft.; show oil and gas at 2,112 ft.

COTTLE COUNTY

Texas Co.'s No. 7 Les K. Johnson, 1,950 ft. W of W line of Sec. 35, Blk. L, S.P.R.R., Foard County, and 500 ft. N of Anglin Sur.
S.D. 140 ft. for csg.

DALLAM COUNTY

Eben Warner's No. 1 Jarboe, 1,520 ft. from S line, 415 ft. from W line, Sec. 2, B.&B. Sur.
S.D. 3,206 ft.; may abandon.

GRAY COUNTY

Cambrian Oil Co.'s No. 1-B Saunders, 330 ft. N and E of S½ of NE¼ Sec. 4, Blk. 1, B.S.&F. Sur.
S.D. 2,360 ft.
Clayton et al's No. 1 Taylor, 330 ft. N and W of NE¼ Sec. 51, Blk. B-2, H.&G.N. Sur.
S.D. 1,980 ft.
Warner's No. 1 Taylor, 330 ft. N and W of SE¼ Sec. 8, Blk. 8, A. W. Wallace Sur.
Cellar.
Irish-American Oil Co.'s No. 1-B Morse, 990 ft. S and 330 ft. E, W½ NE Sec. 54, Blk. 25, H.&G.N. Sur.
S.D. 2,575 ft.
Plains Holding Co.'s No. 1 Morse-Gulf, 330 ft. S and W, Sec. 57, Blk. 25, H.&G.N. Sur.
Material.
Shell Pet. Corp.'s No. 1 Haggard, 330 ft. S and E of NW¼ Sec. 112, Blk. 3, H.&G. N. Sur.
T.D. 3,124 ft.; drlg. plug.
Texas Co.'s No. 1 Taylor, 990 ft. S and W of Sec. 81, Blk. B-3, H.&G.N. Sur.
S.D. 3,155 ft.

HUTCHINSON COUNTY

Dixon Creek O. & Rfg Co.'s 1-C Johnson, 1,020 ft. N, 330 ft. from W of most westerly NW cor. of J. T. Williams Sur.
S.D. 2,785 ft.; 8,000,000 ft. gas.
Huey et al's No. 1 Christian, 220 ft. from S and 330 ft. from W, Sec. 32, Blk. T, A.&B. Sur.
S.D. 3,138 ft.
Stekoll's No. 2 G. W. Whittenburg, 330 ft. S and W of H. Prewitt Sur.
T.D. 2,976 ft.; pumping 65 bbls. per day.
Texilvania Oil Co.'s No. 1 Thompson, 440 ft. N and 2,735 ft. E, Sec. 15, Blk. M-33, T.C. Sur.
Rig.

MOORE COUNTY

Texoma Nat. Gas Co.'s No. 1-P Moore, 2,310 ft. S and 330 ft. E of W½ Sec. 14, Blk. 44, H.&T.C. Sur.
Drlg. 1,610 ft.

OCHILTREE COUNTY

U. S. Oil Corp.'s No. 1 W. R. Norris, 330 ft. S and 990 ft. E, Sec. 212, Blk. 43, H. &T.C. Sur.
Rigged up.

POTTER COUNTY

U. S. Bureau of Mines, No. 2-A Bivins, C NE Sec. 22, Blk. 6, B.S.&F.
T.D. 3,534 ft.; est. 15,000,000 ft. of gas at 3,531 ft.

RANDALL COUNTY

English et al's No. 1 Oxnard.
S.D. 5,620 ft. for csg.

WHEELER COUNTY

Carver Drilling Co.'s No. 1 Rock Island. 1,600 ft. from S line, 2,310 ft. from W line, Sec. 47, Blk. 13, H.&T.C. Sur.
S.D. 2,214 ft.
Cloud et al's No. 1 Farren, 330 ft. N and W, NE SE Sec. 34, Blk. 24, H.&G.N.
S.D. 2,621 ft.
Johnson et al's No. 1 Grogan, 435 ft. N and 150 ft. W, Sec. 57, Blk. 33, H.&G.N. Sur.
S.D. 1,560 ft.; 68,000,000 ft. gas.
Johnson et al's No. 1 Pryor, 330 ft. N and E of E½ NE¼ Sec. 48, Blk. 13, H.&G.N. Material.
LeFors Pet. Corp.'s No. 1 Perkins, 330 ft. from S line, 330 ft. from W line, Sec. 54, Blk. 24, H.&G.N. Sur.
Rig.
Martin & Son's No. 1 Plummer, 330 ft. N and E NW SW Sec. 45, Blk. 45, H.&G.N.
T.D. 2,640 ft.; to complete as gas well.
Reno Oil Co.'s No. 1 Mankins, SW SE SE Sec. 54, Blk. 13, H.&G.N. Sur.
T.D. 2,216 ft.; 50 bbls. oil with 10 bbls. wtr. per day.
Smith Bros.' No. 1 Johnson, 330 ft. N and W, Sec. 34, Blk. 24, H.&G.N. Sur.
T.D. 2,200 ft.; flowed 72 bls. oil in 12 hrs.
Underwood et al's No. 1 Roach, 330 ft. N and E, Sec. 27, Blk. 24, H.&G.N. Sur.
Drlg. 2,080 ft.; 31,000,000 ft. gas at 2,075 ft.

East Central Texas Wildcats

(Continued from Page 76)

140-ac. tract, from W. L. C. Butler Sur., 2 miles NE of Kemp.
S.D. 27 ft.
L. P. Kean's No. 1 J. B. Hunter, R. Sowell Sur., 300 ft. from SW and 150 ft. from SE of 50-ac. tract, 4 miles S of Terrell.
S.D. 2,876 ft.

LIMESTONE COUNTY

Chapman's No. 1 Hunt, 200 ft. from N and 350 ft. from W line 34.75-ac. tract, Israel Wood Sur., 3 miles NE of Kosse.
Top Austin 2,985 ft.; S.D. 3,185 ft.
C. F. Carter's No. 1 Dean, 660 ft. from SE and 330 ft. from SW lines of 75-ac. tract, P. Valella Sur., 3½ miles SW of Mexia.
S.D. 1,717 ft.
Crawford's No. 1 Vol DeLong.
T.D. 2,325 ft.; killed gas to repair csg.; no oil or wtr. shows on test.
Doughtry et al's No. 1 S. Welch, 150 ft. from NW and 900 ft. from NE of 77.64-acre tract in A. Varilia Sur., 4 miles W of Groesbeck.
S.D. 1,803 ft.
Magnolia Pet. Co.'s No. 28 Boyd, 300 ft. NE of No. 26 (Wortham Field).
Location.
Pure Oil Co.'s No. 6-S Ross, 1,500 ft. from N and 400 ft. from E of H. Ross Sur. (Mexia Field).
Drlg. 50 ft.

NACOGDOCHES COUNTY

Murray Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur.
Elev. 457 ft.; drlg. 2,545 ft.
L. & G. Oil Co.'s No. 1 Z. Rambin, 900 ft. N and 330 ft. W of SE cor. of tract and survey, J. Simpson Sur., 12 miles NE of Nacogdoches.
S.D. 1,610 ft.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE line of lease, 10 miles SW of

Corsicana, Wm. R. Bowen Sur.
S.D. 1,136 ft.
R. B. Codding et al's No. 1 Lela Kent, 450 ft. from S line and center of N and S lines of lease, 3 miles NE of Chatfield, C. B. Emmons Sur.
S.D. 1,340 ft.
W. J. Keeling et al's No. 1 J. F. Rushing 484 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.
Bailing 2,880 ft.
McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-acre tract, 1 mile W of Dawson, William Moss Sur.
S.D. 625 ft.
McGlothlin's No. 1 Dobbin, 150 ft. W and midway from N and S lines of 135-ac. tract, E. Lowry Sur., 2 miles N of Corsicana.
S.D. 860 ft.
McGlothlin et al's No. 1 Barnett, 1,230 ft. N and 150 ft. W of 355-ac. tract, Elisha Powers Sur.
Location.
Wiggins et al's No. 1 Donoho, 450 ft. from N and 1,101 ft. from E lines in John Couple Sur., SW of Corsicana.
Derrick.

RED RIVER COUNTY

Abercrombie & Harrison's No. 1 Roberts, 4,500 ft. from E and 500 ft. from N line of John Ware Sur., 8 miles N of Clarksville.
Drlg. 1,975 ft.
Dinger's No. 1 W. T. Norris, 1,000 ft. from S and 1,900 ft. from W of 400-ac. tract, Jos. Guest Sur., 1 mile S of Detroit.
S.D. 80 ft.

RUSK COUNTY

George Hudson et al's No. 3 Jeff Phillips 150 ft. from N line of survey and 700 ft. from W line of 100-ac. tract, 4 miles SE of Minden N. Villaria Sur.
S.D. 3,673 ft.
Ben Lamb's No. 1 H. Leath, 330 ft. out of NW cor. of 185-ac. tract in L. J. Dooley.
S.D. 3,650 ft.; swbd. dry.
Richardson's No. 1 Wood.
Derrick.

SMITH COUNTY

Cloud et al's No. 1 Dendall, 330 ft. from S and W of 55-ac. tract, J. Williams Sur., 3 miles E of Van Field.
S.D. 1,100 ft.

TITUS COUNTY

S. Rotondi's No. 1 Lillianstun, 1,300 ft. E from NW cor. of J. Bodt Sur. and 330 ft. N, but in W. H. Crawford Sur., 5 miles NE of Talco.
Derrick.

VAN ZANDT COUNTY

Delcambre et al's No. 2 Crim, 400 ft. from S and 150 from E lines, Nacogdoches Co. School Lands.
T.D. 1,327 ft.
Pet. P. L. & Storage Co.'s No. 4 Mrs. S. McGee, 450 ft. S of N line and 155 ft. E of W line of 53.4-ac. tract, Blk. 20.
S.D. 1,268 ft.
Wise & Jackson's No. 2 Sanger, 316 ft. W of SE cor. and 151 ft. S of S line of Pure-Blackstock lease, John Walling Sur. Elev. 419 ft.; top sand 2,896 ft.; T.D. 2,926 ft.; 10-ft. oil sand.
Gillum and Allen et al's No. 1 A. T. Bass. 150 ft. from W line and 150 ft. from N line of 10-ac. tract, William Hart Sur.
S.D. 1,700 ft.
Green and Winn's No. 1 Eaton, 330 ft. out of most westerly SW cor. of J. Wilson Sur., 2 miles SE of Martin.
Location.
J. Beren et al's No. 1 Bryant, 483 ft. N of same operator's dry hole, Nacogdoches County School Land Sur.
S.D. 1,325 ft.
Lane-Tex Co.'s No. 1 Listenbee, 150 ft. N and E of tract, Wm. Daniel Sur.
S.D. 1,279 ft.
Beren et al's No. 2 Palmer, 544 ft. from S and 636 ft. from E of 69.5-ac. tract, Nacogdoches County School Land.
S.D. 1,080 ft.
Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur.
S.D. 1,188 ft.; building storage.
M. Rouch et al's No. 1 Bearden & Palmer 150 ft. out of SE cor. of 61-ac. tract, Nacogdoches C.S.L.
S.D. 1,227 ft.
Wadley's No. 1 Carnes, 500 varas N and 1,000 varas E of most northerly SE cor. of 588-ac. tract, S.P. Sur.
Elev. 353 ft.; S.D. 4,670 ft.

Southwest Texas Wildcats

(Continued from Page 73)

HIDALGO COUNTY

Clay, Spencer & Hood's No. 1 Brooks & Showers, 330 ft. N and E lines of Lot 4, Blk. 26, Por. 79-80.
Drlg. green shale 2,960 ft.
Hardy & Lynch's No. 1 Southland Dev. Co., 330 ft. N and W lines, Blk. 14, Por. 17.
Spudded and S.D.
Harrison, Medline et al's No. 1 G. L. & C. Co., 950 ft. W line, Por. 42, 330 ft. N of Old Military Road, in Por. 43.
Abd. 3,205 ft.
Kingwood Oil Co.'s No. 1 Daskom, 215 ft. W line, 218 ft. N line of Lot A-33, Blk. 49, Porcion 41.
Abd. 4,363 ft.
Kingwood Oil Co.'s No. 1 Doughty, 1,314 ft. from N line, 3,750 ft. from W line of Tract 90, in San Salvador del Tule grant.
Drlg. 2,950 ft.
Maxwell-Young's No. 1 King, 175 ft. N and E lines of Lot 3, Blk. 11.
T.D. 875 ft.; to D.D.
Downey & Morton's No. 1 Daskom, 450 ft. from E line, 55 ft. from S line of Blk. 34, Por. 45.
Drlg. 2,600 ft.
Nutex Oil Co.'s (Hankamer & Camp) No. 1 F. Rapp 511-ac. tract, Laguna Seca League. Set surface csg. 200 ft.
Gato Oil Co.'s No. 1 Brocks & Showers, 500 ft. W line, 400 ft. N line of Tract 8, Blk. 26, Por. 79.
Abd. 5,025 ft.
E. A. Showers' No. 1 Brocks & Showers, 660 ft. from N and E lines of Lot 11, Blk. 18, Porcion 79.
Location.
Union Sulphur Co.'s No. 3 American Rio Grande Land & Irrig. Co., 400 ft. from S line, 600 ft. from E line of Lot 2,082, Blk. 88, 200 ft. W of No. 2.
Drlg. 3,460 ft.

JIM HOGG COUNTY

Miller & Pippin's No. 1 Yeager, 527 ft. S line, 150 ft. E line of Blk. 6, Sur. 20.
Coring 1,400 ft.
G. H. Von Rossun's (John D. Norwood) No. 1 C. W. Hellen, 330 ft. N and W lines, Sur. 48.
T.D. 1,335 ft.; resumed drilling to go to 2,500 ft.
J. M. Shugart's No. 1 R. Holbien, 100 ft. from E line, 330 ft. from S line of Blk. 55, Sur. 17 of Holbien Subd., of Las Animas grant.
S.D. 490 ft.
Texas Co.'s No. 1 C. W. Hellen, 5,742 ft. S line, 6,562 ft. E line of Sur. 150.
Drlg. 3,018 ft.

JIM WELLS COUNTY

Maer & Shira's No. 1 Schaeffer, 1,320 ft. E of NW cor. center of Blk. 15, of subdivision of ranch.
Spudded.

KARNES COUNTY

American Liberty Oil Co.'s No. 1 Belknap, 330 ft. from SW line of lease, 3,500 ft. from SE line of Gonzales tract, Blk. 1, Haynes Sur. (Burnell).
Showing for dry gas well; setting csg.
R. G. Tonkin's No. 1 Miss Olive Henke, 2,640 ft. from SW cor. N along W line, thence at R/A 330 ft., Seguin grant.
T.D. 2,817 ft.; to set csg. 2,150-2,212 ft.
R. W. Norton's No. 2 Choate, 1,020 ft. from N cor. of 320-ac. tract, 330 ft. SW of NE line, A. Storey Sur.
Abd. 3,384 ft.

KERR COUNTY

Meteor Oil Co.'s (Edminton & Walker) No. 1 Whitworth, 1,160 ft. from S line and 1,332 ft. from E line of Sec. 1,439, of the H.E.&W.T. Sur.
Prep. to set 12½-in. surface csg. at 800 ft.
Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,530 ft. from SE cor. and 300 ft. from N line of Sec. 1,591.
T.D. 3,530 ft.; fishing U.R. lug at 3,460 ft.

LEE COUNTY

Humble O. & R. Co.'s No. 1 J. Simmons, 269-ac., 3,650 ft. from S line, 2,510 ft. from E line, Hunter Sur.
Drlg. 4,587 ft.
Jas. E. Pederson's No. 1 Turner, 1,360 ft. from N line, 150 ft. from E line of tract, David Hudson Sur.
T.D. 6,560 ft.; tested 1,700 ft. S.W.; plugging back.
Stowe & Schariach's No. 1 Otto.
T.D. 1,700 ft.; standing; moving in new boiler to deepen to Edwards lime.

LIVE OAK COUNTY

Arthur, Brunson & Hall's No. 1 W. P. Howard, 150 ft. from W line, 2,400 ft. from N line of 200-ac. tract, in B. Ayers Sur.
Coring 1,109 ft.
Baugh & McMillan's No. 1 Walton & Campbell, 1,500 ft. NE line and SE line of D. R. Fant Sur.
Drlg. 2,400 ft.
Berry & Hayes' No. 1 C. L. Terrell, 1,600 ft. N line, 330 ft. E line of Henry Sur.
Drlg. 1,800 ft.
California Co.'s No. 1 Blankenship, 466 ft. from SW line, 2,000 ft. from SE line, A. A. Dunn Sur.
T.D. 2,660 ft.; blew in; caught fire; controlled.
Henderson Coquat's (Luling O. & G. Co.) No. 1 Rex, C of SW¼ of G.H.&H. Sur., Abst. 197, 3 miles S of Mileska.
Spudded.
Lee McCoy et al's No. 1 R. Murry, 1,000 ft. from S line, 4,900 ft. from E line of Heffernon Sur.
S.D. 410 ft.; showing gas.

MAVERICK COUNTY

Escher & Andrews' No. 1 Mathews, NW cor. of B. C. Flowers Sur.
Drlg. new shallow sand 750-850 ft.

McMULLEN COUNTY

Howard & Claunch's No. 3 Claunch, 1,800 ft. from SE line, 1,200 ft. from SW line of M. Hely Sur.
Drlg. 560 ft.
Points et al's No. 1 Fahler, 2,000 ft. from S line, 2,500 ft. from W line of 1,000-ac. tract, Pittuck Sur.
S.D. 370 ft.
Texas Pet. Co.'s No. 1 Two Rivers ranch, 350 ft. from S line, 1,125 ft. from E line of NE¼ of Sec. 65, Ranch Subd.
S.D. 1,469 ft.
Witherspoon Oil Co.'s No. 1 Fisher, 200 ft. from N and E lines of Blk. 19, O'Boyle Sur.
Abd. 1,044 ft.

MEDINA COUNTY

Scoggins & Sanders' No. 1 L. W. Burrell, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. 395.
S.D. 1,850 ft.

MILAM COUNTY

H. V. Pedersen's No. 1 Sandow (formerly C. F. Drake et al's No. 1 Standard Coal Co.) 970 ft. SW line, 1,700 ft. SE line of G. L. Johnson Sur.
Moving in heavier rig; T.D. 1,575 ft.
Frank W. Kellar, Inc.'s No. 1 A. L. Lucas, 1,980 ft. from N line, 400 ft. from E line of 178-ac. tract, J. Real Sur.
Drlg. 1,500 ft.

NUECES COUNTY

Magnolia Pet. Co.'s No. 1 S. Page, 190.8 ft. from W line, 196 ft. from N line of 75-ac. tract in Kinney Sur. No. 536, Sec. 8.
Drlg. 1,009 ft.

REAL COUNTY

H. J. Heartwell et al's No. 2 L. J. Maby, 694 ft. from W line and 2,152 ft. from S line of A.B.&M. Sur. No. 175.
T.D. 2,837 ft.; running 8-in. csg.

SAN PATRICIO COUNTY

Allied Minerals' No. 1-A Ramsey, 466 ft E, 220 ft. N of SW cor. of the North B. Giddings Sur. on a 1,000-ac. tract.
Sandy shale 2,642 ft.; moving in heavier rig; S.D.
Lonnie Glasscock's No. 1 M. F. Timmons, 330 ft. out of SE cor. of Blk. 27, San Patrico townsite.
No report.
Stanolind O. & G. Co.'s No. 1 J. J. McMillan (Whitehurst), 165 ft. from W line, 990 ft. from N line of Lot 12, Fulton Pasture Subd., Fitzsimmons League.
W.O.C. 1,232 ft.

STARR COUNTY

Armstrong, Emanuel & Adams' No. 1 S.C. C.C., 330 ft. from S and E lines of Blk. 57, Porcion 88-89.
Drlg. 2,700 ft.
C. R. Borah's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E lines of Sec. 6 (NE part of county).
S.D. 2,687 ft.
John H. Clopton's No. 1 Roos, 13,155 ft. N of Highway 4, along E line of Por. 92, 3,300 ft. N, 80 deg. 45 min. W.
Drlg. 3,560 ft.
John H. Clopton's No. 1 Dioncia Lopez de Tijerina, Blk. 4, Tract C-14, Porcion 80.
Spudded.
Crawford et al's No. 1 Hicks et al, 150 ft. SE and NE line of NW, Perdernal grant.
S.D. 1,615 ft.
Dainwood Oil Co.'s No. 1 Guerra, 5,280 ft. W line and N line of Share 26, Porcion 70-71-72.
Location.
F. D. Vernon's No. 1 G.L.&C.C.O., 330 ft. midway between N and S lines of Lot 8, Porcion 100.
S.D. 2,746 ft.
Morris & Bryan's No. 1 Hicks & Hicks, 660 ft. NE line, 2,000 ft. SE line of 500-ac. tract, Pedernal grant.
T.D. 1,100 ft.; no report.
Conroe Drlg. Co.'s No. 1 Guerra, 330 ft. from NE and SE lines of Blk. 35, J. N. Crawford Subd., Por. 56, Jurisdiction of Mier.
Drlg. 2,230 ft.
Dale Sneed's No. 1 Y. and V. Guerra, 330 ft. W line of Por. 68, 330 ft. S line of 1,000-ac. block of N end of Por. 92, in Por. 68.
W.O.C. 208 ft.
Sunray Oil Co.'s No. 1 S. Sanchez, 1,500 ft. S of Great Plains' No. 1, in Sur. 344.
Drlg. 616 ft.
R. H. Vice's No. 1 Carruth, 3,690 ft. from S line, 3,300 ft. from W line, Share B-1, Por. 91-92.
T.D. 4,016 ft.; ran Schlumberger survey.
S. L. Younkin's No. 1 Kelsey Bass, 330 ft. from S line, 7 ft. from W line of Blk. 19, in Porcion 87.
Drlg. 2,608 ft.

TRAVIS COUNTY

D. Prewitt's No. 1 Ed Peterson, 150 ft. from SE and SW lines of tract, L. Kimbro Sur.
Rigging up.
C. A. Stubbs' No. 1 Julius Kerlin, 530 ft. SW line, 450 ft. NW line of 123-ac. tract in I. Lindsay Sur. No. 61.
T.D. 1,060 ft.; no report.

WEBB COUNTY

Mills Bennett's No. 1 Slator, 330 ft. SW and NW lines of Blk. 46, Mission Oil Co. Subd., Borrego grant.
No report.
Frank E. McMillan's No. 1 Bruni, 330 ft. from S and E lines of SW¼ of SE¼ of Sur. 77.
Derrick.
Payne et al's No. 1 Hoggterp, Blk. 5, Sur. 1,110, N of Oilton.
Drlg. 609 ft.
Arthur H. Wray's No. 1 Geo. Stuempke, Share 1, Brewster pasture, Galan grant.
Spudded; moving in heavier rig.

WILLACY COUNTY

Daniel et al's (South Texas Dev. Co.) No. 1 Armendias, 1,500 ft. W of Arroya Colorado River, 1,200 ft. N of S line of Tract 4.
Drlg. 2,560 ft.

WILLIAMSON COUNTY

Fritz Fuchs' No. 1 Pflugger, 500 ft. S and E lines of Jacob Sapington Sur.
S.D. 900 ft.
Johnson & Ray's No. 1-B M. Oxford Smith, 600 ft. S of No. 1-A in S. Williams Sur.
S.D. 20 ft.
J. Morgan Russell's No. 1 Nelson, 1,150 ft. S line, 1,115 ft. E line of John L. Justice Sur. No. 2.
S.D. 894 ft.

ZAPATA COUNTY

Dinn's (Danvers & Harrison) No. 1 M. J. Vela, 686 ft. NE line and 300 ft. NW line, or 3,140 ft. E line and 330 ft. N line of Por. 29, Blk. 7, Bela Subd.
Drlg. 2,095 ft.
H. B. & W. Oil Co.'s No. 1 Cuellar, 150 ft. NE line, 450 ft. SE line of Blk. 3, Sur. 3, Papas Subd., Porcion 34.
Standing 1,345 ft.
H. & M. Oil Co.'s (Virginia Hardee) No. 1 Slator, 514 ft. from SW line, 150 ft. from SE line of Blk. 66, Borrego grant.
Standing 22 ft.
Joe Palmer's No. 1 J. M. G. Martinez, 150 ft. SE and SW line, Blk. 27, Sur. 434.
Drlg. 1,085 ft.

Southwest Texas Proven

Week Ended February 16

CARROLL—BASTROP COUNTY

Nelson Pruett's No. 2 J. H. Carroll, 960 ft. from SW line, 4,150 ft. from NW line of A. Maye Sur. No. 19.
S.D. in shale 1,660 ft.

NORTH CEDAR CREEK—BASTROP COUNTY

Joe E. Mills' No. 1 Mrs. W. J. Cardwell, 900 ft. from SE line, 1,200 ft. from SW line of tract, J. A. Navarro Sur.
S.D.; chalk 1,320 ft.

CAESER—BEE COUNTY

Caesar Oil Co.'s No. 3 R. E. Miller.
S.D. 3,000 ft.
Neversuch Oil Co.'s (J. K. Hughes of Mexia) No. 1 Barroum, 330 ft. from N and W lines of SW 40-ac. of W½ offset to Barroum 1,068-ac. tract in Baker Sur.
Moving in machinery.
Luling O. & G. Co.'s No. 6-B Ruhman, 660 ft. from NW line, 550 ft. from NE line of 163-ac. tract, Hodge Sur.
Derrick.
El Toro Co. of Houston's No. 1 Gardner, 870 ft. from S line, 920 ft. from E line of 105-ac. tract, F. Lewis Sur.
Coring Pettus sand 3,000 ft.

PETTUS—BEE COUNTY

United Prod. Co.'s No. 48 Ray, begin at SW cor. of Houston Oil Co.'s Niehaus "B" Lease, thence in northwesterly direction along property line between Niehaus and Ray, 990 ft. at R/A to previous course, then 330 ft. to point of location.
Drlg. shale 2,752 ft.

TULETA—BEE COUNTY

Blanco Oil and Buchanan's No. 1B Peres.
T.D. 3,956 ft.; I.P. 75 bbls. per day on 3/16-in. choke.
Conroe Drlg. Co.'s No. 1 Hayden.
S.D. 4,000 ft.
Edwin M. Jones' No. 2 Robinson, 330 ft. from S line, 990 ft. from E line of SW¼ of Sec. 5.
Derrick.
Edwin M. Jones' No. 1 Skinner & Harris.
Rigging up.
Edwin M. Jones' No. 6 Skinner & Harris, 330 ft. from W line, 990 ft. from S line of E½ of NW¼ of Sec. 10.
T.D. 3,930 ft.; I.P. 300 bbls. per day.
Edwin M. Jones' No. 8 Skinner & Harris, 660 ft. S of No. 6.
Sand 3,057-82 ft.; no show; D.D.
H. K. Hasselman's No. 1 Sparrow, C of Tract 4, NE¼ of Sec. 20.
T.D. 3,978 ft.; tested S.W.; P.B to 3,100-ft sand.
Houston Oil Co.'s No. 3 Ed Strauss, 660 ft. W of No. 1, Lot 3, SW¼ of Sec. 9 in J. M. Uranga grant.
Drlg. shale 2,500 ft.
Houston Oil Co.'s No. 5 Ed Strauss, C of Lot 10, SW cor. Sec. 9.
Set 7-in. csg. at 3,962 ft.; W.O.C. 3,967 ft.
Houston Oil Co.'s No. 6 Ed Strauss, C of Lot 11, SW¼ Sec. 9, W offset to No. 5.
Bldg. derrick.
Mills Bennett's No. 2 Harris, 990 ft. from E line, 330 ft. from S line, S½ of NW¼ of Sec. 9, Uranga grant.
Set 5 3/16-in. csg. 3,923 ft.
Mills Bennett's No. 2 Silcock, 330 ft. from S and E lines of 160-ac. tract.
T.D. 3,904 ft.; I.P. 4 bbls. per hr.; ¼-in. choke; tubing pressure 800 lbs.; csg. pressure 1,000 lbs.
Southwest Exploration Co.'s No. 1 Heyden & Bruckham, C of farm tract, 330 ft. from N and W lines of Sec. 20, Uranga grant.
Rigging up.
Tuleta Oil Co.'s No. 3 Skinner & Harris.
Spudded and set surface csg.

VON ORMY—BEXAR COUNTY

Jack Crouch's No. 5 Hoch, 330 ft. S of No. 4, Baerera Sur. No. 58.
S.D. 250 ft.
Richcul Oil Co.'s No. 1 Kohler, 1,000 ft. from N line, 155 ft. from E line of J. Vogt 96.5-ac. tract in J. M. Baerera Sur. No. 58.
Drlg. 1,035 ft.
Richcul Oil Co.'s No. 1 Marshack, 155 ft. from W line, 1,500 ft. from S line of 100-ac. tract, Samuel McCulloch Sur.
Drlg. 335 ft.
Richcul Oil Co.'s No. 1 W. A. F. Vogt, 160 ft. from E line, 972 ft. from S line of 300-ac. in S. McCullough Sur. No. 54.
Drlg. 1,075 ft.
Richcul Oil Co.'s No. 1 Wellbacker, 155 ft. from E line, about 2,250 ft. S of highway in Jett Sur.
Standing 590 ft.; (depth corrected).
Umburn & Trawalter's No. 4 Wm. Biel.
Drlg. 216 ft.

DRISCOLL—DUVAL COUNTY

Continental Oil Co.'s No. 4-A Clara Driscoll Sevier, 160 ft. from W line, 258 ft. from N line of Sur. 448.
Drlg. sand 3,428 ft.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Bridwell Oil Co.'s No. 2 Schoolfield, 990 ft. from N line, 330 ft. from W line of Blk. 13, Sur. 78.
W.O.C. 2,390 ft.
Central Prod., Inc.'s No. 2 Wendt, 330 ft. from S line, 990 ft. from W line of NE¼ of Sur. 43.
T.D. 2,283 ft.; I.P. 12 bbls. per hr.
Central Producers, Inc.'s No. 4 Wendt, 990 ft. from S and W lines of Sur. 43.
Drlg. 500 ft.
Edgington & Murray's No. 2 C. W. Hahl, 330 ft. N and E lines, Blk. 16, Sur. 350.
Drlg. 1,290 ft.
Govt. Wells Oil Co.'s No. 12 State, 330 ft. from S and W lines of SE¼ of Sur. 60.
T.D. 2,288 ft.; I.P. 200 bbls. per day.
Govt. Wells Oil Co.'s No. 13 State, 660 ft. from N line, 1,323 ft. from W line of N½ of NW¼ of Sur. 60.
Rigging up.
Frank Gravis et al's No. 1 C. W. Hahl, 330 ft. from S and E lines of NE¼ of Sur. 365.
W.O.C. 20 ft.
Humble O. & R. Co.'s No. 2 Vela, 990 ft. from S and E lines of N½ of Sur. 42.
T.D. 2,782 ft.; completing well.

DON'T GUESS
you're drilling Straight,
BE SURE
with the
H-K
(Hewitt) (Kuster)
Directional Magnetic
CLINOGRAPH
for use in open holes

If those producers who continuously check the hole while drilling, demand an instrument—

1. Rugged and infallible
2. Simple and easy to operate
3. Records obtained almost instantly
4. Easily interpreted by the driller
5. Permanent for filing

—we know that they will find in our H-K *Clinograph* these advantages to the highest —and at a very reasonable cost.

SPERRY-SUN WELL SURVEYING CO.
1608 Walnut Street
PHILADELPHIA, PA.

TULSA, OKLAHOMA
402 Petroleum Bldg.

HOUSTON, TEXAS
3118 Blodgett Avenue

LOS ANGELES, CALIF.
415 Petroleum Securities Bldg.

H-K CLINOGRAPH
also
SURVEY & SYFO Surveying Instruments

Magnolia Pet. Co.'s No. 2 Duval County Ranch, 330 ft. from S line, 990 ft. from E line of Sur. No. 57.
Drlg. 1,900 ft.

Magnolia Pet. Co.'s No. 4 Humble-D.C.R.C., 330 ft. from S line, 1,650 ft. from E line of NE¼ of Sur. 363.
Location.

Magnolia Pet. Co.'s No. 4-C Hahl, 330 ft. from S line, 990 ft. from E line of Sur. 60. R.U. (location and depth corrected).

Magnolia Pet. Co.'s No. 6-C Hahl, 990 ft. from W line, 330 ft. from N line of NE¼ of SW¼ of Sur. 61.
T.D. 2,336 ft.; I.P. 8 bbls. per hr. on pump.

Magnolia Pet. Co.'s No. 4 Ruiz, 1,141 ft. from SW line, 330 ft. from NW line of Sur. 127.
T.D. 2,451 ft.; I.P. 100 bbls. per day.

Salt Dome Oil Co.'s No. 4-B Moody, 990 ft. from N line, 330 ft. from E line of NW¼ of Sur. 60.
Drlg. 1,020 ft.

Smith & Story's No. 13 Lundell, 990 ft. from N line, 330 ft. from E line of S½ of Sur. 48.
T.D. 2,325 ft.; I.P. 50 bbls. per day

Texas Co.'s No. 4 Hahl, 330 ft. from E and E lines of Blk. 17, Sur. 250.
Drlg. shale 2,034 ft.

Texas Co.'s No. 1 M. Vela, 330 ft. from N and E lines of S½ of Sur. 42.
Drlg. shale 882 ft.

Texas Co.'s No. 1 Wendt, 330 ft. from S and E lines of 75-ac. tract, Sur. 43.
Rigging up.

E. R. Thomas' No. 1 Bishop Cattle Co., 2,325 ft. E line, 330 ft. N line of S½ of Sur. 135.
No report.

DARST CREEK—GUADALUPE COUNTY

Grayburg Oil Co.'s No. 13 McKean, 500 ft. NE of No. 4, Cottle Sur.
Drlg. 1,682 ft.

LUCAS—LIVE OAK COUNTY

Houston Oil Co.'s No. 30 Cartwright, 1,030 ft. N of No. 26.
TD. 5,266 ft.; comp. as gas well making some oil; 1,150 lbs. working pressure on csg.

Houston Oil Co.'s No. 21 Cartwright, 1,010 ft. N of No. 30, J. Sandman Sur.
Building derrick.

Lion Oil Ref. Co.'s No. 3 McNeil, 660 ft. N, 660 ft. E of No. 1.
Drlg. 4,285 ft.

MARBACH—LIVE OAK COUNTY

Durbin et al's No. 3 Marbach, 1,800 ft. from E line, 450 ft. from S line of 428-ac. tract in S. Hays Sur.
T.D. 894 ft.; rerun liner and washing.

SAM FORDYCE—HIDALGO COUNTY

Alamo Drlg. Co.'s No. 2 Guerra, 233 ft. from N line, 330 ft. from E line of NW 12.5 acres of S 75 acres, of Tract 254, Por. 40.
T.D. 2,125 ft.; well controlled and capped.

Cortes Oil Co.'s (Weekly) No. 3 Smith, 240 ft. from N line, 150 ft. from W line of Tract 278, in Por. 40.
Drlg. 1,830 ft.

Gem Oil Co.'s No. 1 Seabury, 230 ft. from S and E lines of W 24 acres, Tract 256, Porcion 38.
Drlg. 1,350 ft.

Heep Oil Corp.'s No. 1 Lawrence, 226 ft. from N line, 241 ft. from E line of SE 5 acres of Tract 274, Porcion 39.
Derrick.

Henshaw Oil Corp.'s No. 1 Seabury et al, C of SW 11.5 acres of NE 45.25 acres. Tract 256, Por. 38.
Location.

Moncrief & Showers' No. 3-B Lawrence, 350 ft. from N line, 241 ft. from E line of NE 13.5 acres of E 37.64 acres of Tract 274, Porcion 39.
Drlg. 2,761 ft.

Moss & Bass et al's No. 1 F. B. Guerra, 282 ft. N line, 233 ft. W line of W 25 acres of S 50 acres of E 290 acres, Tract 254, Por. 40.
Derrick.

Navarro Oil Co.'s No. 3 Seabury, N 25-ac. Tract 256, Porcion 38.
Testing sand 2,761 ft.

Reserve Oil Co.'s No. 2 Seabury, 330 ft. S and E lines of 28-ac. tract, Tract 256, Porcion 38.
Derrick.

Rogers O. & G. Co.'s No. 2 Guerra, SE 25 acres of Tract 254, Por. 40, 4,500 ft. SE of discovery well.
T.D. 2,751 ft.; I.P. 15 bbls. per hr.

Waite's (Scheafer & Mundy), Ind. Dist., 25 ft. from N line, 210 ft. from E line of Tract 260, Porcion 38.
Rigging up.

Windsor Oil Co.'s No. 2 Doss, 150 ft. from N and W lines of 55-ac. tract, Por. 40.
Drlg. 1,530 ft.

SANDIA—JIM WELLS COUNTY

O. W. Killam's No. 4 Wade, ¼ mile N of No. 3 Wade.
T.D. 4,023 ft.; made 45 bbls. per hr.; not going to S.W.

Magnolia Pet. Co.'s No. 6 Seeligson, 660 ft. W, 330 ft. S of No. 3, Canales Sur. No. 20.
Spudded.

Sinclair Prairie's No. 1-A Seeligson, 630 ft. from N line, 330 ft. from E line of B.S. &F. Sur.
T.D. 3,715 ft.; reblding. derrick.

KINGSVILLE—KLEBERG COUNTY

Fidelity Exploration Synd.'s No. 1 Vivian Kivlin, Sec. 4, Blk. 39, K.T.&I. Sur. on Vivian Kivlin lease.
Derrick up.

JACOB POOL—McMULLEN COUNTY

Kennon & Stephenson's No. 2 Lark, 150 ft. from N and W lines of Blk. 15, Scrugham Sur.
Coring 1,033 ft.

Loma Oil Co.'s No. 103 A. Leonard Jacob, 1,320 ft. S of No. 33-A, 160 ft. E line, W. H. Jacob Sur. No. 8.
Abd. 993 ft.

Loma Oil Co.'s No. 104 Jacob, 660 ft. W of No. 103, Jacob Sur. No. 8.
S.D. 750 ft.

Longhorn, trustee's No. 4 Lark, Blk. 4 of the Scrugham Sur.
T.D. 1,035 ft.; trying to comp.

Motes & Bettingfield's No. 3 Lark, 660 ft. S of No. 1 and 330 ft. W line of lease.
T.D. 988 ft.; I.P. 350 bbls. per day.

Stewart, Smith & Story's No. 2 Jacob, 660 ft. S of No. 1.
T.D. 867 ft.; I.P. 8 bbls. per day

AGUA DULCE—NUECES COUNTY

United Gas Co.'s No. 2 M. F. Rivers, 330 ft. from E line, 330 ft. from N line of Rivers' 168-ac. tract.
Preparing to run straight hole test, 4,795 ft.

SINTON—SAN PATRICIO COUNTY

Heep Oil Corp.'s No. 1-B R. Welder, 466 ft. from S line, 2,000 ft. from Eline of Adeline Welder tract in Victor Loupsey Sur.
T.D. 5,453 ft.; I.P. 20 bbls. per hr.

Humble O. & R. Co.'s No. 1 Welder, 2,490 ft. from N and E lines of 300-ac. lease.
Drlg. shale 4,483 ft.

ANGELITA—SAN PATRICIO COUNTY

Plymouth Oil Co.'s No. 2-B Welder, start at SW cor. of "B" lease, thence NW along the W line 2,100 ft., thence 350 ft. NE at R/A.
Preparing to run Schlumberger 6,859 ft.

LOS OLMOS—STARR COUNTY

H. L. Curry's No. 1 Bass, 835 ft. E line, 2,522 ft. N line of Sur. 8, Por. 75-76-77.
Drlg. 718 ft.

J. P. Kennedy's No. 1 Kelsey-Bass, 200 ft. SE of No. 7 Kelsey-Bass in Blk. 7 of Porcions 75, 76 and 77.
Standing 710 ft.

BARBACOAS—STARR COUNTY

Merren Bond et al's No. 4 S.C.C.C., 330 ft. from N and E lines of S 20 acres of Blk. 24, of the Jeffries Lambeth Subd., Por. 39.
Rigging up.

SAXET—NUECES COUNTY

Southern Mineral Corp.'s No. 4 Ocher, 1290 ft. S line and 417 ft. E line of Ocher 202.52-ac. tract in Sec. 8.
Derrick.

WEST COLE POOL—WEBB COUNTY

American Liberty Oil Co.'s No. 13-A Bruni, 330 ft. from NE line, 260 ft. from NW line, Blk. 45, Sur. 8, Arispe grant.
Rigging up.

American Liberty Oil Co.'s No. 8-A Bruni 883 ft. NW line, 777 ft. SW line of Sur. 6, M. Arispe grant.
Location.

American Liberty Oil Co.'s No. 1-C Bruni, 330 ft. from NW and SW lines of 95-ac. tract, Sur. 7.
Rigging up.

CarolinaTexas O. & G. Trust, Inc.'s No. 11 S. Benavides, 150 ft. from S line, 600 ft. from W line, Blk. 12, Sur. 683.
Drlg. 3,357 ft.

Cole Pet. Co.'s No. 90 Bruni, 332 ft. from NE line, 330 ft. from SE line of Sur. 1
T.D. 3,409 ft.; P.B. to test sand 2,900 ft.

Foster Barnsley's No. 6 Webster, 150 ft. N line, 510 ft. S line of NE SW Sur. No. 6[illegible]
Testing 3,053 ft.

O. W. Killam's No. 1-A Bruni, 275 ft. from N line, 200 ft. from W line of Blk. 55, Brown Subd., Albercas grant.
Drlg. 750 ft.

O. W. Killam's No. 32 Bruni, 260 ft. from SE line, 418 ft. from NE line of Blk. 28, Sur. 8.
Rigging up.

O. W. Killam's No. 31 Bruni, 2,187 ft. SW line, 150 ft. SE line of Sur. 6.
T.D. 3,413 ft.; I.P. 20 bbls. per hr.

Magnolia Pet. Co.'s No. 5 C. Benavides, 150 ft. from S and E lines of NE¼ of SE¼ of Sur. 661.
Coring 2,357 ft.

Magnolia Pet. Co.'s No. 7 S. Benavides, 296 ft. from SE line, 11 ft. from SW line, Blk. 368, Arispe grant.
Drlg. 2,400 ft.

Highland Oil Co.'s (Pure) No. 2 Bruni, 330 ft. NW and NE lines of tract in Sur. 7.
Location.

Peerless-Seeligson et al's No. 1 Bruni, 330 ft. from NW and W lines, Arispe grant, Sur. No. 6.
Set 10-in. csg. 300 ft.

Sun Oil Co.'s No. 1 Bruni, 418 ft. from NE line, 260 ft. from SE line of Blk. 10, Arispe grant.
Drlg. 2,275 ft.

Sun Oil Co.'s No. 3 Bruni, 260 ft. SE line, 418 ft. NE line of Sur. 5.
T.D. 3,436 ft.; to core deeper.

Sun Oil Co.'s No. 10 Bruni, 418 ft. NE line, 260 ft. SE line of Blk. 19, Sec. 5.
Drlg. 2,200 ft.; (changed from No. 4 to No. 10).

BYERSVILLE—WILLIAMSON COUNTY

R. R. Ogden's No. 1 Matteck, 150 ft. N and W lines of 198.5-ac. tract in White Sur.
Location.

GOPHER—ZAPATA COUNTY

O. W. Killam's No. 2 Bruni, 5,700 ft. from NW line, 2,615 ft. from NE line of Borrego grant.
Drlg. 371 ft.

JENNINGS—ZAPATA COUNTY

Texas Co.'s No. 63 Whitehead, 4,004 ft. from SE line, 19,919 ft. from SW line, Cerrito Blanco grant.
Drlg. sandy shale 1,474 ft.

LOPENO—ZAPATA COUNTY

Norden & Morris' No. 1 Leon Ramirez, 603 ft. SE and NE lines of Blk. 4, Por. 20.
T.D. 2,218 ft.; comp.; 40,000,000 ft. of gas per day.

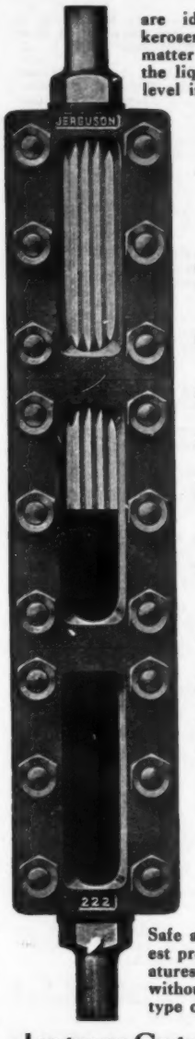
Venture Pet. Corp.'s No. 1 Ramirez et al, 2,120 ft. NE line, 603 ft. from SE line, Blk. 1, Porcion 20.
Testing 2,253 ft.

MARTINEZ—ZAPATA COUNTY

MIRANDO VALLEY—ZAPATA COUNTY

Cliff Durke' No. 1 R. Hinnant, 200 ft. W line, 750 ft. S line of Blk. 16, Sur. 116.
Standing 1,582 ft.

JERGUSON
REFLEX GAGES



are ideal for gasoline, kerosene, steam, oil. No matter what the color of the liquid, they show the level in BLACK.

The *empty* space appears WHITE

The *Liquid* shows BLACK

Safe and durable at highest pressures and temperatures. Furnished with or without valves for every type of service. Write us.

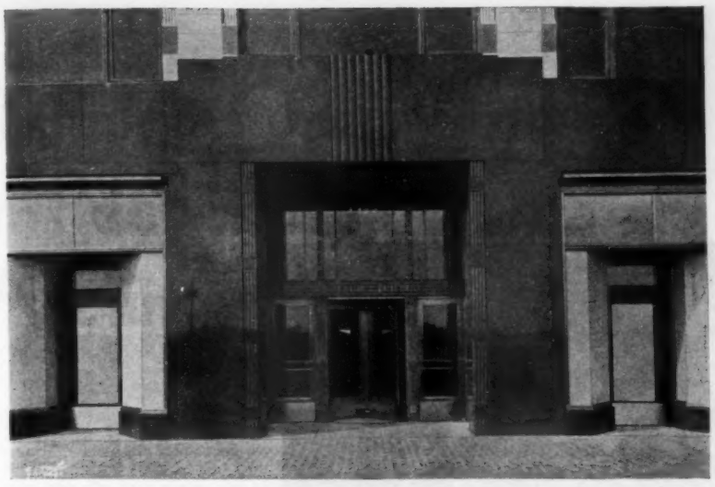
Jerguson Gage & Valve Co.
Mystic Ave. and Northern Artery
SOMERVILLE, MASS.

LIGHT YOUR PROPERTIES
at low cost with—
Universal MOTOR CO.
ELECTRIC PLANTS

● You can have reliable AC or DC current at lower than high line rates with these Universal Electric Plants. Complete range of models from 330 Watts to 50 KW fit every need for light or emergency power in the oil fields.
Universal offers you 30 years' light plant experience—plus a complete understanding of your special problems. More than 1,000 plants in oil field service attest Universal's dependable performance. Save money. Ask for data on operating costs, Catalog D-1.

write for catalog

UNIVERSAL MOTOR CO. OSHKOSH WIS.



The entrance to the Petroleum Building exemplifies its smartness and dignity.

THE PETROLEUM BUILDING

616 SOUTH MICHIGAN AVE. CHICAGO

"Home of the Chicago Oil Men's Club"

The accompanying views are good examples of what Chicago's New Oil Center has to offer in the way of unusually fine accommodations for oil companies having Chicago headquarters.

The impressive entrance, spacious modern lobbies and corridors all compose a fitting setting for the attractive office suites.

—o—

Several fine units are still available for Spring leasing. These units are entirely open so that new installations may be designed and built exactly to your specifications. For particulars apply

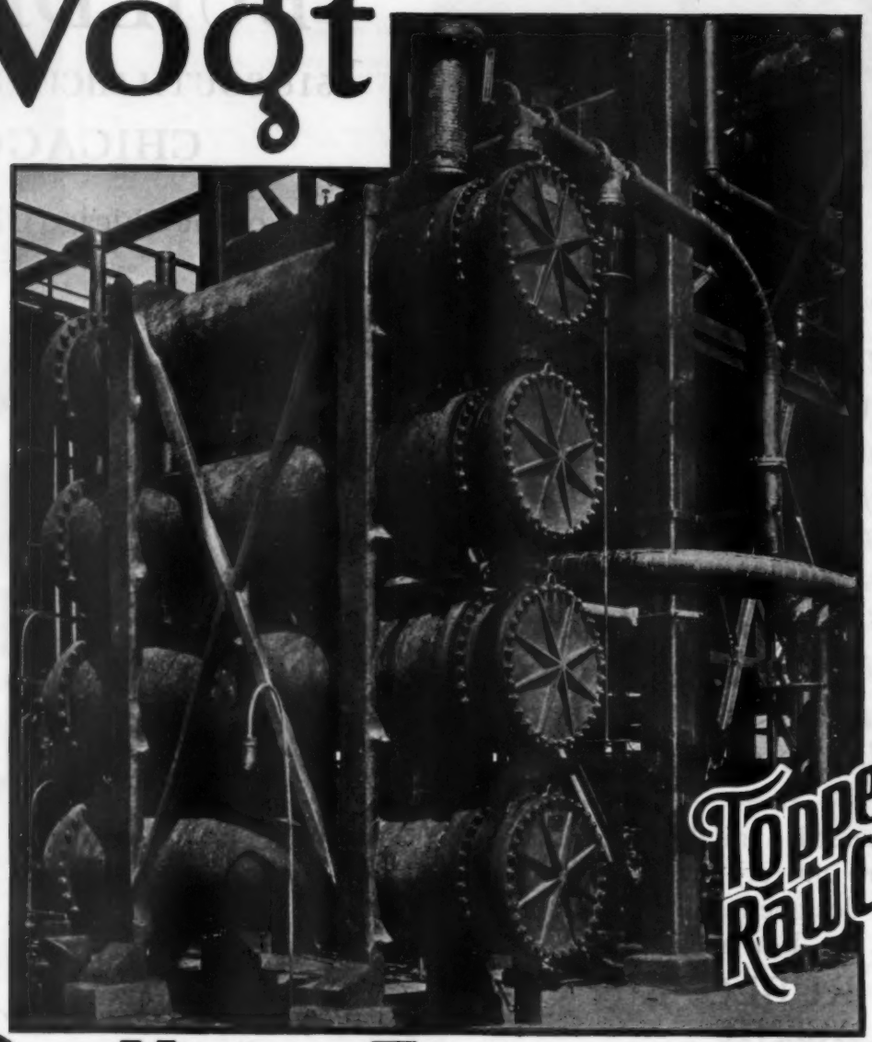
ARTHUR RUBLOFF & CO.
AGENTS

Upper floor corridor.

Typical office interior showing the even distribution of light from the new, specially designed Westinghouse fixtures.

Upper floor elevator lobby.

Vogt



OIL HEAT EXCHANGERS

Manufacturers of: Heat Exchangers, Water Tube Boilers, Drop Forged Steel Valves and Fittings, Oil Refinery Equipment, Ice Making and Refrigerating Machinery.

. . . . . working on East Texas crude at a large Louisiana refinery and giving steadily satisfactory performance.

Topped crude enters tube side at 530°F. and leaves at 150°F., heating raw crude from 100°F. to 340°F. passing through the shell; exchanging a total of 29,400,000 B. T. U. per hour.

Steadily satisfactory performance involves correct engineering design and proper selection of materials for the operating conditions.

Get our complete recommendations for your heat exchange problems.

HENRY VOGT MACHINE CO. *Incorporated* LOUISVILLE, KENTUCKY

NEW YORK CHICAGO CLEVELAND CINCINNATI PHILADELPHIA KANSAS CITY DALLAS

Refining Operations in Pechelbronn Area Are in Three Sections

View of the complete refinery of Pechelbronn Societe Anonyme D'Exploitations Minieres, located near center of Pechelbronn field

France, which has expanded its new refining facilities faster than any other country over the past years, can also lay claim to having what is probably the oldest operation for the production and refining of crude oil. The field, which is known as "Pechelbronn," is located in the northern part of the department of Bas-Rhin in the township of Wisembourg et Haguenau and has been operated consistently by various owners since 1768. The initial production was very small but a plant located in the field which in recent years has become a modern refinery, has always refined the crude oil into products for which there was a demand during the several periods in which it has operated.

The original ownership and operation was carried on by the "Le Bel" family previous to the German occupation of Alsatia. It was operated by German interests from 1889 until the end of the World War. It was returned to France by the Tribunal of Strasbourg in 1921 which leased the producing territory and refineries to Pechelbronn Societe Anonyme D'Exploitations Minieres for a period of 99 years. This company has since operated the properties. Over the past several years the company has modernized all phases of the operation as much as possible and the products now refined from the crude oil are comparable with those obtained at other French refineries most of which have been built over the past three years.

Producing Methods

The concession covers 44,000 hectares, or approximately 18,000 acres. Only a small part of the concession has been developed. The field in the past has attracted considerable attention due to the producing methods. Part of the production which totals approximately 1,500 bbls. daily is received from several hundred pumping wells with a few flowing wells. The remaining output is obtained in a mining operation.

The latter method is often used to extract the oil after the wells cease to show commercial production. The mining operation, briefly described, consists of galleries usually driven above the deposits in which at certain intervals sumps are dug into which the seepage oil is collected and pumped to the surface by ordinary methods. The well production is obtained as deep as 1,800 feet. The shafts in the mining operation vary from 500 to 750 feet. The mining operation, while expensive compared to the usual operations of the oil industry, is efficient and is conceded to have greatly increased the crude oil recovery of that area which up to this time is the only important oil production found in France. A more detailed description of the mining operation was published in the December 26, 1929, issue of The Oil and Gas Journal, page 154.

Refinery Operation

The crude oil obtained from well and mining operations varies slightly in properties. A representative distillation test showed 8.7 per cent gasoline, 20 per cent kerosene, 8 per cent gas oil, 40 per cent lubricating stock, 14 per cent brea and coke and the remainder fuel and losses.

This domestic supply is supplemented with imports which are now approximately 600 bbls. daily coming from fields in South America. The company is affiliated with French interests which own a 23.75 per cent interest in the Iraq Petroleum Co., Ltd. It is understood that the company will be one of the refiners of Iraq crude oil. The transportation of this imported crude oil to the inland Pechelbronn refineries is a major problem in itself. The crude is brought in at the port of Antwerp, Belgium, and lightered as far as Lauterbourg from which point it is transported by tank cars to the refinery. At times the Rhine is not navigable to Lauterbourg and the boats are unloaded at Bingen and Mannheim.

View of Nos. 2 and 5 shafts for underground mining of crude oil in the Pechelbronn field of France. Part of the 1,500-barrel daily production is obtained from several hundred drilled wells and the remainder by mining. Mining operation has been carried on for over 150 years

The refinery operation is divided into three distinct sections. The description of these sections furnished by plant engineers follows:

1. The "Lampertsloch" section, in which these operations are carried on as follows: Topping of domestic crude; redistilling of gasoline and kerosene, if necessary; refining of gasoline, kerosene and gas oil; cracking of miscellaneous products, with operations connected therewith; shipment of white products and fuel oils.

2. The "Merkwiller" section, at which the following operations are carried out: Redistillation of lubricating-oil stage, of the residue from the topping of the domestic crude; refining of all lubricating oils; redistillation to the coke stage, of petroleum pitch; extraction and refining of paraffin; shipment of all products other than the white products and the fuel oils.

3. The "Kutzenhausen" section. The last-named is the most modern portion of the refinery, where the main activity is the refining of foreign oils.

4. A central plant located, approximately in the center of the refinery, supplies the steam and electric current required for all the extraction and refining operations. Steam is supplied by five boilers. Both here and in the stills, coal is used as fuel. The central plant is equipped with three generators; one Ljungstrom turbine of 2,000 k.w. regularly in service; one spare turbo-alternator of 1,350 k.w.; one steam engine driving a 2,500-k.w. alternator, likewise in reserve.

Topping

The domestic crude is topped by means of coal-fired stills operating at atmospheric pressure and each having a rectifying column. Their total capacity is 1,400 to 1,500 bbls. daily. The products obtained are: Touring gasoline, heavy gasoline, "petrolux" and ordinary kerosene.

The bottoms known as "residue 65," because it represents about 65 per cent of the crude subjected to distillation, is shipped to the "Merkwiller" section for extraction of the lubricating oils

The topping of the foreign crude is effected in stills which are heated by fuel oil or by pulverized coal with a large rectifying column, from which several streams are taken. The capacity of this battery of stills is 750 bbls. daily.

Redistillation of Products

The standard products—touring grade of gasoline, heavy gasoline, "petrolux" and ordinary kerosene—are usually obtained direct from the first distillation, and do not require any redistillation. For the manufacture of special items, however, it is sometimes necessary to rerun. Batch stills are used for this operation.

Redistillation of Oils

The oils are produced by a process of continuous redistillation of the residue from the topping operation. After being dewaxed and classified by being redistilled in a vacuum of 60 c.m. of mercury, the distillates are collected and concentrated so as to obtain the whole scale of products marketed. For this process 22 stills of 40 cubic meters each are employed at the Pechlebronn plant.

Treating

Gasoline is subjected to a continuous treating operation immediately upon leaving the condensers.

Kerosene is refined with concentrated H_2SO_4 and activated earth, these operations being effected in agitators.

The paraffin extraction is accomplished in two different ways. First, by a chilling followed by compressing, in the case of products containing more especially the crystalline paraffins. The dewaxing installations at the Pechlebronn are equipped with 22 filters. For the cooling, three refrigerating machines are used. The dewaxing in the case of amorphous paraffin is accomplished by chilling and centrifuging. The oil is dissolved in gasoline and the mixture is chilled to —20° C., and then centrifuged by Sharples supercentrifuges of 17,000 r.p.m. Several grades of paraffin wax are refined.

Cracking Unit

The cracking unit of the Wolf-Carburol type is designed to handle gas oil with a production of 63 per cent semirefined gasoline, 22 per cent of residue (fuel oil) and 15 per cent of gas and losses. The residue is a fuel oil of low viscosity.

The products obtained are classified by the company as follows: (1) Semirefiined gasoline; (2) intermediate products that are automatically brought back into the cracking cycle (recycled); (3) a residue —heavy or fuel oil; (4) gases used for firing furnace.

Asphalt and Coke

The asphalt or petroleum pitch is obtained when the topping residue is redistilled. The Pechelbronn plant is equipped with an installation making it possible to furnish this product into either drums or cakes. These products are used by Pechelbronn mostly for preparing road emulsions. The equipment comprises a still for liquefying the asphalt, storage tanks for the soap solution and an emulsifying machine. The remaining asphalt is used in the manu-

(Continued on Page 88)

Electric Power Used Successfully to Drive Important Refinery Pump

By L. G. E. BIGNELL
Petroleum Engineering Editor

When a representative for a public utility company approaches a prospective electric power user it is quite natural that the prospect will inject into his argument the idea that he is afraid of delays occasioned by power being cut off from time to time by conditions beyond the control of the power company. This type of argument has been handed down from father to son because during the early days of power transmission many delays were experienced due to numerous causes, but the very fact that electric service has expanded and is now being used in every industry in all parts of the country without inconvenience to the customers is conclusive evidence that interrupted service is so infrequent little attention is now paid to this argument.

There are instances where units operated by electricity form part of a system that must be in constant operation 24 hours every day of the year and interruption of any kind, even for a few minutes, would cause great damages. Some processes in modern refineries require such constant electric service and an example of the combined ingenuity of the electrical hydraulic and mechanical engineers is to be found in units now in use at Mid-Continent Petroleum Corp.'s West Tulsa refinery.

There are three of these units first having been installed in February, 1934, the second in June and the third in August, 1934. Each unit consists of a Cameron centrifugal pump, connected through flexible coupling to a General Electric A.C. motor, and the side opposite to the pump having an extended shaft also to which is connected to a Terry steam turbine that serves as a stand-by unit to be cut in automatically to drive the pump in the event the electric power fails.

The centrifugal pump is installed to handle oil for charging stills and it is necessary that this oil be forced into the system constantly for an interruption of the flow might cause damages. This system is much the same as that of the feed pumps for steam boilers. The water must be delivered at a constant rate or the level within the boiler will fall so low that tubes may be damaged by the heat.

The pump, motor and turbine are all mounted up on a structural steel sub-base that carries each unit at the proper height to align the shafts. The sub-base is installed upon concrete foundation.

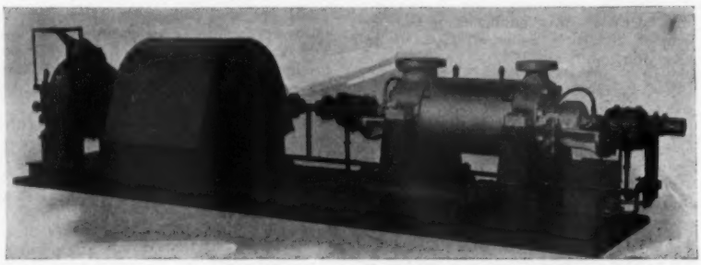
Dual Drive

Providing two sources for power to drive the centrifugal pump has been classified as dual drive and the power during most of the time is furnished by the public service company supplemented by some electricity generated in the refinery's power plant at the West Tulsa location. The motors used are of the General Electric type F.T. 700-horsepower, three-phase, 60 cycles, 2,200 volts, 3,600 r.p.m. squirrel cage type with double extended motor shaft. The motor on each unit is placed between centrifugal pump and steam turbine and if the current fails the steam turbines pick up enough of the load to continue to circulate the oil although not at full volume.

The current for the electric motors enters the plant through a substation located upon the grounds and is conducted into the company's generating station. By the use of various control methods in the company's station the electric current furnished by the power company and a portion of the current generated in the company's plant is delivered into one set of cables that carry this combined current to the motors.

The cables conducting the current from power plant to pump house are enclosed in conduits and buried in the ground to reduce interruption from electric storms in the vicinity of the refinery to a minimum.

This system has been in use for about one year and during that time the actual lost time due to electric current interruption in the power company's system has been very infrequent and the maximum shut down period was for about 30 minutes' duration. This shutdown was brought about by an exceptionally heavy thunderstorm. There were several other interruptions lasting a few minutes. The interruptions to the electric motors in these units were not as long in duration as similar interruptions in city lighting because at the central station of the power company it is much easier to cut in the substation furnishing power to the refinery than it is to make all the adjustments necessary to turn the current back into the numerous city circuits that furnish light for streets and dwellings.



Centrifugal pump at right driven normally by 700 H.P. electric motor in center and a steam driven turbine stand-by unit at extreme left

Steam Turbine

A type G.A. Terry turbine is supplied for each of these units with the main shaft connected by flexible coupling to the rotor shaft of the motor that sets between turbine and pump. The impeller wheel in this turbine is turned by the electric motor at all times at the full speed of 3,600 r.p.m. Live steam is permitted to enter the turbine at all times but instead of heating the impeller the small volume of steam permitted to enter while the turbine is operating under no load duty tends to cool because at the speed of 3,600 r.p.m. the wheel draws air into the housing through the partly filled steam lines and this produces a cooling effect upon the impeller wheel and housing.

While the turbines turn over constantly so long as the electric motors are running they do not develop any power, or consume much, because the accurately balanced impeller wheels turn with very little effort. But turning at this speed they keep a special type governor closed, or nearly so, and it is not until the motor slows down from 5 to 20 per cent of its normal speed that the governor opens wide and permits a full volume of steam to enter the turbine and drive the impeller and generate power that rotates the rotor in the electric motor and in turn drives the centrifugal pump at its normal speed but without delivering the full volume of oil until the electric motor again cuts in.

The Terry turbine used in these units is rated at 450 horsepower at 3,600 r.p.m. with 90 pounds per square inch steam pressure. These turbines will operate, at reduced horsepower, with steam or gas under pressures as low as 40 pounds per square inch. The fact that these turbines will operate with gas as well as with steam makes it possible to use them in natural gasoline plants to generate power and many of the units are used for this purpose.

The novel feature of the Terry turbine is the sensitive governor that controls the flow of steam into the steam chest. This is of the double seated balanced valve type with renewable seats. In these units used in connection with the centrifugal pumps and electric motors the governors will start to open as the normal speed of 3,600 r.p.m. is slowed down.

If the electric current is interrupted the motor will slow down because of the work it is required to do in pumping the oil into the system. As the centrifugal pump impellers move at slower speed the impeller in the steam turbine will also move more slowly and this reduced speed will cause the governor to automatically open and permit live steam, always available at the entrance to the steam chest, to enter.

As this steam passes through the impeller blades the steam turbine picks up the load where the electric motor relinquished it and even though the electricity is not available to the motor the rotor is turned by the turbine and the impeller in the centrifugal pump continues to rotate and move the oil.

The only difference in the system operated by the steam turbine in place of the electric motor is the power available. With the steam turbine 450 horsepower can be supplied but with the electric motor 700 horsepower is available. The volume of oil handled by the pump is less than when driven by the larger motors but the pressure is not lowered so that the system served by the pumps is not in danger of damage from lack of oil.

To insure steam at all times the lines from the main boiler plant are so arranged that they may be tapped at two points in the system and it is difficult to conceive of a time when both branches of the steam system would be down at the same instant.

Centrifugal Pump

The pumps used are of the Cameron seven-stage, 1,000 g.p.m. type made by Ingersoll-Rand with 8-inch inlet and 4-inch discharge and run at a normal speed of 3,600 r.p.m. The pump shaft is attached to the motor shaft by means of flexible coupling.

This entire installation is unique in that during most of the time the pumps are driven by the electric motors. They get their electricity from current delivered into the power station of the refinery and this energy is supplemented by current generated by steam turbine-driven generators located in the station. The system is provided with control devices consisting of starting switches, no voltage release, overload relay so that if the current is lowered or increased in voltage the motors will be protected.

The refinery power plant is operated 24 hours per day throughout the entire year and the operative on duty is constantly checking meters and other instruments and is therefore conversant with what is going on in all departments using power.

In the event that the service in the pump room is interrupted in any way the load upon the generators and in turn upon the steam turbines driving them in the power plant will be increased. This increasing of load upon the turbines is quickly noticed by change in sound given off by rotating parts and the operatives know instantly what is wrong and what to do to adjust distribution of electrical energy to those essential departments in the refinery that must be operated at full capacity or suffer damage.

The performance of the pump units has been very satisfactory and it has been very infrequent that the steam turbines have been cut into the system, but during the few instances when they have been called upon to keep the centrifugal pumps turning over they have performed their duty in a very satisfactory manner. This auxiliary service removes practically all argument against the possibility of power failure in service lines because it is admitted that neither machine or man is 100 per cent perfect but knowing possible defects in a system of this kind the electrical, mechanical and hydraulic engineers have co-operated to develop a practical unit that will operate under every condition and at the same time not throw overload upon the power plant of the refining company nor upon the power company's lines.

L. J. Peters, with the Texas Petroleum Council, Longview, Tex.

Linde Process Service
speeds-up laying of
Sea-going Pipe Line

UPON completion of an oil pipe line to load tankers a half mile out to sea, the Chief Engineer of the oil company was so pleased with the aid rendered by Linde Process Service that he wrote:

"We have recently constructed and successfully launched a 16-in. Submarine Line. The perfect consumation of this job was in no small measure due to the extraordinary efforts of your service organization. We are deeply appreciative of the splendid cooperation accorded us by your company."

This is Linde Process Service at work. It brings to Linde customers —at no extra cost—the latest and best pipe-line welding methods, assists in training and qualifying operators, and helps organize welding operations to insure satisfactory performance.

The nearest Linde Sales Office will gladly give you full information on Linde Process Service. These are located at: Atlanta—Baltimore, Birmingham, Boston, Buffalo, Butte —Chicago, Cleveland—Dallas, Denver, Detroit—El Paso—Houston—Indianapolis—Kansas City—Los Angeles—Memphis, Milwaukee, Minneapolis—New Orleans, New York—Philadelphia, Phoenix, Pittsburgh, Portland, Ore.—St. Louis, Salt Lake City, San Francisco, Seattle, Spokane and Tulsa.

● OUT TO SEA—for a half mile this 16-in. Oxwelded pipe line rests on ocean bottom . . . supplies tanker cargoes.

● FIVE DAYS—from delivery of pipe to finished job. Linde Process Service cooperated. Oxwelding assured strong, permanent, leakproof, jointless line.

Everything for oxy-acetylene welding and cutting—including Linde Oxygen, Prest-O-Lite Acetylene, Union Carbide and Oxweld Apparatus and Supplies—is available from Linde through producing plants and warehouse stocks in all industrial centers.

PRODUCT OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION

The Linde Air Products Company
Unit of Union Carbide and Carbon Corporation

UCC NRA CODE

In Canada:
Dominion Oxygen Co., Ltd. Toronto

YOU CAN ORDER EVERYTHING FOR OXWELDING AND CUTTING FROM LINDE

AMERICAN
STEEL & WIRE COMPANY

WIRE LINES

Remove the Element of Chance

WIRE Lines take such an important part in drilling that operators throughout the oil fields are playing safe by using **American Steel and Wire Company Wire Lines.** Wherever the going is tough—and the need for exceptional dependability exists—**American Steel & Wire Company Wire Lines** will establish remarkable records for their users. How much safer it is to use Wire Lines that have proved their dependability and stamina beyond question. Our special Wire Lines for Rotary and Cable Tool Drilling are made to remove doubt and worry from your mind. Convenient stocks and our nearby engineers are both at your immediate call.

AMERICAN STEEL & WIRE COMPANY

208 SOUTH LA SALLE STREET • • CHICAGO

Offices in All Principal Cities

United States Steel Corporation Subsidiary

Peculiar Conditions Increase Adaptation of Controlled Drilling

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Feb. 18.—Increasing adaptation of controlled directional drilling is being manifest in exploration and development of Gulf Coast fields. Although this science has been brought to attention through a few successful instances of its application to the drilling of relief wells used in the killing of wild producers, its practice has been and is becoming more widespread all the time in various other phases of drilling operations and for many different purposes.

The peculiar conditions involved in the development of most Gulf Coast fields are especially conducive to directional drilling. Salt domes, which make up the bulk of coastal fields in particular offer every opportunity for work along this line. Even in other types of coastal pools there are occasions when intentional deflection of holes can be of advantage and facilitate proving up of production.

Producing horizons around salt domes, more particularly those of the piercement type, usually are extremely lenticular and faulted, and in the flanking sands, which generally dip off very steeply, production ordinarily is limited to a somewhat narrow and irregular strip around the periphery of the dome. This situation has made drilling of salt dome production treacherous and uncertain, and for an operator to find the oil and then follow the narrow line of production the drilling of numerous dry holes generally has been necessary. In this, tests drilled too close in to the dome went into salt, missing the pay, while, vice versa, tests too far out from the dome naturally were found too low and in the water.

Recent Work

Recent work which has been done in controlled directional drilling on and around a number of coastal salt domes has met with very decided success in tapping of designated pay horizons at favorable positions. By this practice, which is becoming more and more general, wells found either too high up on the dome or too far out can be deflected, property lines and state limitations and regulations permitting, from their normal vertical to follow such a course underground as to reach any given objective.

Typical of some of the unusual applications of controlled directional drilling in the development of salt dome production is the use to which it was put in a well which has just been drilled at Barbers Hill. This well is being completed as a producer but had it not been for the advancement in the art or science of correcting a natural course of a hole and guiding it to a specified objective, another dry hole might have resulted. It so happens that the location of the well is such that a hole drilled vertically would have gone through the salt overhang as intended and topped the underlying producing horizon at a favorable position. However, on topping the salt, the hole drifted naturally off vertical and in towards the center of the dome from the overhang.

It has been found in all drilling of salt that for some reason holes tend to drift inward. In the particular well referred to salt was topped at approximately 1,375 feet. Drilling was continued to a depth of 3,120 feet at which point the hole was surveyed and found to be 44 feet east and 44 feet south, or approximately 63 feet in a direct line southeast of vertical. Continuation of that course would have prevented the hole from going out of salt. Original practice under such circumstances would have been for the operators to plug the hole back to the point where it started drifting and then attempt to drill a new straight hole which might have resulted similarly.

Changed Directions

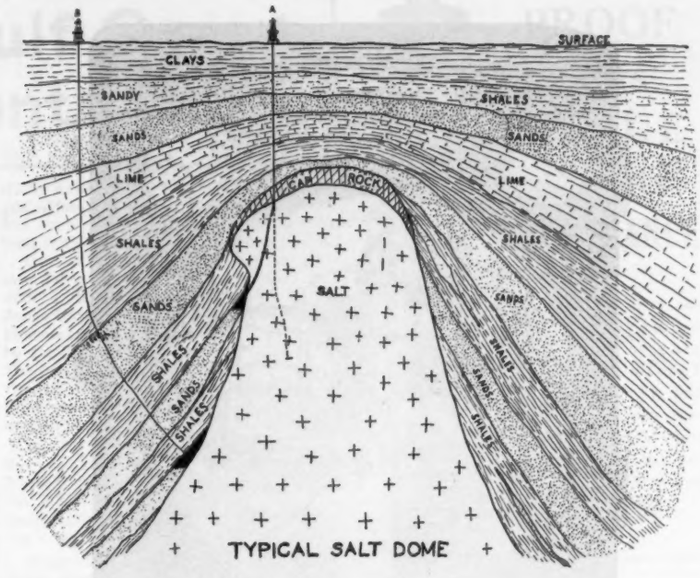
Instead, engineers were called into service. Specialists in the science of controlled directional drilling, they directed the setting of a patented removable whipstock, changed direction of the course of the hole from south 70 degrees east to north 10 degrees east and established a drift angle of 4 degrees which was maintained by proper control of weight and speed of drill pipe. This brought the hole back around and out of the salt at 3,488 feet at a point approximately vertically below the surface location. From that point the hole was drilled vertically to 3,575 feet where it now is in oil sand in process of completion. A string of 9⅝-inch casing was cemented at 3,488 feet just below the salt.

Turning the course of a well accurately in salt previously has been a difficult and somewhat uncertain undertaking due to the fact that in salt trouble is experienced in keeping conventional whipstocks in the desired position and at the determined angle. The nature of salt is such that it tends to prevent the proper and secure anchoring of the tool. However, a whipstock now has been designed with a rotary shoe type base permitting setting of the tool solidly in the salt and preventing its turning.

Directional drilling which has been undertaken recently at the Lake Barre Dome in the coastal marsh land district of Terrebonne Parish, Louisiana, also is of especial interest. Characteristic of this dome is its unusually narrow productive strip, hardly more than 150 to 200 feet wide. The operating company, in its development of the dome, is drilling a single line of wells around the flank of the dome at intervals of about 600 feet. The sand is found at a depth of 3,800-3,900 feet underlying a small overhang several hundred feet in thickness. The width of the productive strip is so narrow that the operating company has had to feel its way very carefully from location to location. With the protrusion of the overhang so slight, wells have had to follow very closely along the periphery of the dome. If drilled off the dome, the sand would be found too low and vice versa, if drilled inward from the edge a test would hit the main part of the dome.

Operations in Water

In view of the fact that operations are in the water, the cost of wells is high with all equipment placed on piling. Consequently it is desirable and necessary that the operators minimize the number of failures. Thus when a test recently drilled and which was found off the dome, failing to hit domal formation after going to a depth of 2,714 feet, operators instead of abandoning the hole as previously would have been the practice, decided to try to divert the course of the hole inward toward the dome and attempt to top the producing sand in a more favorable position. A survey of the hole showed the bottom at 2,714 feet to be north 38 degrees west off vertical with a 1-degree inclination. A removable whipstock was set on bottom and the hole turned in the direction of south 6 degrees west with an inclination of 3 degrees. The hole started turning out, however, and at 2,771 feet it was south 31 degrees west with an inclination of 4 degrees 30 seconds; at 2,813 feet, south 39 degrees west with an inclination of 4 degrees, and at 2,849 feet, south 59 degrees west with an inclination of 4 degrees. To get the hole turned back around to the south in the direction of the dome a whipstock again was set at the latter depth and at 2,895 feet the bottom was at a point south 20 degrees west with an inclination of 4 degrees. At 2,932 feet it was south 7 degrees and inclined 5 degrees, which course was followed on down and as a result the well was successful in topping the pay just below 3,800 feet at a position not far removed from where a normal well location would have hit it.



Intentionally Off

Adoption of a practice at Lake Barre of intentionally starting well off the dome and then deflecting the hole inwardly to a favorable position in the sand close up to the dome may materially facilitate development. In previous operations, wells to reach the sand had to drill through a very hard anhydrite cap. Peculiarly this cap not only covers the top of the dome but also extends down the side. Wells which happen to be drilled through the overhang at a point close to the contact of the anhydrite and salt down the side have extreme difficulty in maintaining vertical hole, the tendency being for the hole to keep turning inward into the salt following the course of least resistance. In the cap rock also are cavities which sometimes give considerable trouble. By being able to drill wells away from the dome, these difficulties can be eliminated.

Another Lake Barre well was intentionally deflected twice in exploration for the pay. The original hole was drilled to a total depth of 3,900 feet, missing production. The hole then was plugged back to 3,120 feet, where whipstock was run, and then drilled in a northeasterly direction, again missing the pay. A whipstock then was set at 3,124 feet and the hole drilled in the direction south 31 degrees west.

The ability of operators to drill a multiple number of holes from one location is of distinct advantage in the exploration for oil in the water located fields and prospects of coastal Louisiana, where the cost of and difficulty of setting up derricks and rigs are so great. Notable work along this line has been done particularly around the Bay St. Elaine Dome, also in the coastal marsh district of Terrebonne Parish. Around most salt domes, as previously mentioned, sands usually are so lenticular and irregular and production often so spotted, that it is possible for single wildcats to miss any trace of production although it might be only a short distance away. Thus, it is possible by the drilling of several holes from derrick floor to test a comparatively wide area which otherwise might require the drilling of as many as four or five separate tests. If production is found nothing is lost as all the various locations no doubt would have to be drilled anyhow.

On another salt dome in coastal Louisiana, controlled directional drilling has just been employed in a deep wildcat to cross a fault in an attempt to find production. This is a deeply seated salt dome, which has been proven as such but on which so far no commercial production has been opened. The above wildcat, the third on the dome, also turned out unsuccessfully and was abandoned early this month. The first test, which was started in 1933, was drilled to a total depth of 7,195 feet in salt. It encountered oil showings in the Shoal River and also the Vicksburg, immediately overlying the salt but operators were unable to make a well after several tests and abandoned the hole. The showing, however, led to the drilling of a second test, which missed the dome after drilling to 7,216 feet.

A third test, the recent abandonment, was started. Located less than 1,500 feet from the first test, it topped the salt at 6,580 feet, some 300 feet higher than in the first test, but cut across, and in so doing got only a very small section of the Shoal River and Vicksburg, the overlying formations in which showings were found in the first test. It was evident that if the fault were crossed and the Shoal River and Vicksburg encountered on the upthrow side adjacent the fault plane there would be a good chance of getting production. However, instead of making a new location between this and the first test and drilling an entirely new well, operators determined to drill a deflected hole from their present test. It was calculated where the top of the Shoal River should contact the fault plane, this to be the objective. The old hole was plugged back to approximately 4,500 feet where 8½-inch whipstock was run. In the deflected hole the angle of deviation varied from around 3 degrees to as much as 15 degrees at times. Al-

Control Valve Compensation—Thermo Pressure Compensation with dual control of temperature and pressure—Overheat Protector to prevent damage to thermal system—Separate Recording Coil—Interchangeable unit construction—Non-corrosive Materials—and other features insure reliable performance.

Get the most out of your New Solvent Refining Processes with MASON-NEILAN control

"Give us better oils," insist the oil company sales managers. "Give us better processes," echo the refinery owners. "Give us better control," demand the engineers.

Today this demand for finer oils is being met by the perfection and introduction of new and improved processes for solvent extraction and dewaxing.

Both here and abroad these new processes are being controlled by Mason-Neilan equipment to insure satisfactory regulation of temperature, flow and pressures, vital to the efficiency of the processes and quality of the products.

Mason-Neilan instruments and regulators have been developed to keep pace with the Oil Industry by trained research engineers. If you are building a new refinery or modernizing an old one—call our nearest representative, an engineer whose specialized experience will be helpful.

MASON-NEILAN
REGULATOR COMPANY
1190 Adams Street, Boston, Mass.

YOU CAN BE SURE OF MASON-NEILAN PRODUCTS

though the operators reached their goal and drilled the deflected hole to a depth of 6,409 feet, they failed to find production.

Widely Used

Considerable use has been of directional drilling practices at Leesville, La-Fourche Parish, Pierce Junction, Sulphur, Vinton, Hackberry and various other domes, as well as at Conroe, Tomball and several other fields not known to be salt domes. The practice as a definite science was initiated on the Gulf Coast in the drilling of the relief well which was instrumental in killing the Harrison and Abercrombie crater well. It then was introduced to salt dome operation. It was at Conroe later that attention again was directed toward the possibilities involved in such drilling when the Feltex Oil Corp. drilled a diagonal well to the pay sand from a surface location outside the productive limits. Under regulations governing spacing, the company was not permitted to make a location within 466 feet of the line of its lease although it was calculated that as much as seven and one-half acres of the lease was productive. Although the bottom of the deviated hole was less than 75 feet from the lease line, drilling of the well conformed to all regulations as to vertical drilling with the bottom of the hole within the 5-degree limit. At Tomball, where spotted productive conditions prevail, several operators have been able to deflect their wells slightly from areas of poor production to more desirable positions on structure and make good wells.

There has been considerable conjecture as to the possibilities of reaching formations underlying heaving shale sections flanking salt domes by drilling vertically down through the salt as far as necessary and then deflecting the hole outward to the desired formations. Heaving shale around salt domes yet has to be conquered when encountered in substantial thicknesses and drilling down through the salt would open unlimited fields for exploration.

Oil Prospects Brighter Says President Blaffer

R. L. Blaffer, president Humble Oil & Refining Co., made the following statement at the anuual stockholders' meeting, Houston, Tex.:

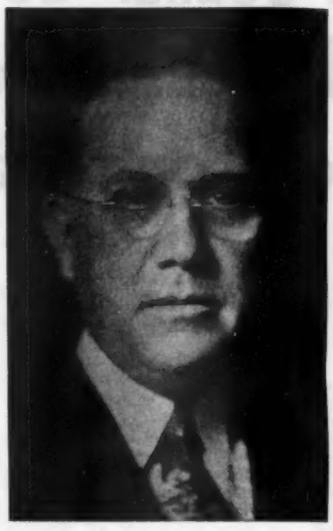
At our annual stockholders' meeting, held February 12, 1934, I stated that I believed the oil industry had reached a turning point and that prospects for the year 1934 seemed brighter. I am glad to report that this prophecy has partially come true for the year 1934, although product prices are still very unsatisfactory.

The earnings of the company during the past year have not been definitely determined up to this time, but I am glad to say that from the figures we already have, we have more than made our dividends.

We have increased the number of employes approximately 1,100 persons. We are glad to state that the company employes constitute about 36 per cent of the total number of our stockholders, and shortly 2,249 additional employes will become stockholders through the 1933 plan. Six thousand three hundred employes, or about 60 per cent of the total number, are participating in our new 1935 series stock plan.

Conditions have been such for the past several years that our refining business standing alone, has not shown a reasonable profit and has given your directors very great concern. We have, however, during the past year, concluded a product sales contract with the Standard Oil Co. of New Jersey, a Delaware corporation, which is fixed and certain and insures a market outlet for so large a proportion of our manufactured products as to make possible a reasonable profit to your company upon all of its refinery operatioss, if operated economically and efficiently as your directors hope to do.

During the year 1934 we have made capital expenditures of approximately $42,000,000, of which a large amount was spent in the acquisition of producing properties and undeveloped leases, in order to strengthen the company's position with respect to reserves and in development and equipment of leases. Our undeveloped acreage has increased consider-



R. L. BLAFFER

ably during 1934. One of our principal acquisitions was the King ranch and adjacent ranches.

We produced during the year 44,699,158 bbls. of oil, of which our part was 34,892,726 bbls., or a daily net average of 95,285 bbls., or a gross of 122,470 bbls., coming from 2,887 whole interest producing oil wells and 1,706 part interest producing wells. The value of our part of the production was considerably more in 1934 than it was in 1933, due to the better crude prices that prevailed; but, on the other hand, the cost of production was considerably more, on account of increased taxes and labor and material costs.

In addition to the net oil produced by our company, we purchased during the year approximately 50,000,000 bbls. of oil from other producers, or an average of 136,089 bbls. per day; and we consumed in our own refineries approximately 36,000,000 bbls., or a daily average of 98,643 bbls.

We drilled 808 wells, of which 73 were dry holes, and our various partners drilled 85 additional wells, making a total of 893 wells drilled during 1934. The Humble Pipe Line Co. handled 107,000,000 bbls. of oil during 1934.

Refining Operations in Pechelbronn District

(Continued from Page 83)

facture of coke in small hemispherical stills. There are 250 storage tanks for use at the refinery.

As the Pechelbronn refineries are not located on a water course, all shipments are made by rail or by motor truck. The various products are shipped either in bulk (70 to 140-bbl. tank car loads) or in full carload lots of package goods; some shipments are made in separate packages or in bulk on ordinary railway cars (asphalt and coke). Shipments are made either direct to customers or to the terminals of the various companies affiliated with the Pechelbronn group.

Shipments out of the plant located at the Petroleum Port in Strassburg are to a large extent effected partly by way of the Rhine as far as Antwerp and thence by sea to the different French seaports, and partly over the system of canals serving that city.

The following are the distributing concerns affiliated with Pechlebronn:

Societe Alsacienne des Carburants, Socal S.A., Lausanne; Societe Francaise des Petroles, Essences et Naphtes; Societe des Huiles Antar.

RED BALL CUTTING SERVICE

for Your

CONVENIENCE

A RED BALL Crew is always near you, with complete OUTSIDE Cutting Equipment for that stuck drill pipe job. Call or wire us your location.

J. S. Abercrombie Co.
21st FLOOR GULF BLDG.
HOUSTON - TEXAS

TANK

RECONDITIONING, CORROSION TREATMENT, PAINTING AND SAND-BLASTING

Complete Workmen's Compensation and Liability Insurance.

AIR SPRAY PAINTING CO., Inc.
BOX 5005 - - DALLAS, TEXAS

HOMCO

IS EXCLUSIVE DISTRIBUTOR OF HAZARD WIRE ROPE IN THE GULF COAST

Branches: Palestine, Kilgore, Freer, Sam Fordyce, Texas, Eunice, N.M.

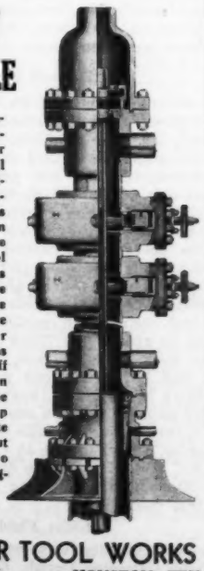
Branches: Lake Charles & Houma, La.

Other Stocks: Cleveland, Louise, Livingston, Refugio

"Cutting and Fishing Tool Service"

PREVENT TROUBLE

The Warren Control Head provides means for packing off drill pipe and attaching Christmas-tree connections in case of an emergency. One Shaffer Control Gate provides high pressure shut off on the drill pipe. The other Shaffer Control Gate has complete shut off rams for open hole. Thus the whole set up gives a complete compact blowout prevention to meet any emergency.



Write for 1935 Catalog

SHAFFER TOOL WORKS
BREA, CALIF. - - - HOUSTON, TEX.
FOREIGN: Oilwell Supply Co.

Among Gulf Coast Drilling Contractors

Cron & Gracey have completed a well for themselves in the Manvel Field, Brazoria County, their first production in the Gulf Coast. The company also has a rig running in the Manvel Field for the Texas Co.; one in East Texas for themselves; one at Eunice, N. M., for the Repollo Oil Co.; one near Kingsville, Tex., for Sinclair Prairie Oil Co.; one at White Castle, La., for the Shell Petroleum Corp.; one at Barbers Hill for Sinclair Prairie Oil Co.; four at Iowa, La., for the Shell Petroleum Corp., and one at Roanoke, La., for the Shell Petroleum Corp.

Gus Cormier is drilling below 3,000 feet on No. 2 Frank Truksa on Mustang Dome, Brazoria County.

Turnbull & Irwin have abandoned the Brooks Estate wildcat test, located at Penn City on the Houston Ship Channel, at 6,015 feet.

Glenn H. McCarthy, Inc., is setting oil string in a well for West Production Co. in the Conroe Field, 14 feet of sand having been cored. As an outcome of the McCarthy-Seaport well in Big Creek, completed recently for a good producer, a second location has been made for an offset well 70 feet due north.

F. R. (Pops) Flanigan, whose big rig is under lease at the present, is leaving at once for a two weeks' trip to California where he and Mrs. Flanigan will visit relatives.

As a result of heavy mid-winter rains, most Gulf Coast oil fields during the past week were either under water, or practically unapproachable because of deep mud. Many locations staked are yet waiting derricks, and many rigging-up jobs have been delayed.

George Echols hopes to have his big gasoline rig on location and running this week in the Manvel Field, where he has a contract to drill for the Windsor Oil Co. Several feet of water on the location have considerably hindered setting up the rig.

Rutherford Drilling Co. is drilling at 4,945 feet in shale for the Atlantic Oil Producing Co. in the Refugio Field, while at Sam Fordyce, Hidalgo County, the company has a rig waiting to be set up on a well for Skelly Oil Co. as quickly as a permit is obtained.

San Patricio Drilling Co. is rigging up to drill No. 8 Fannie Hooper for Brown and Wheeler in the Conroe Field.

Alamo Drilling Co. is drilling below 7,300 feet on its No. 1 Laura Lackner in the Eureka Heights Field, Houston's latest city limits discovery. The C. B. Bunte, Inc.'s discovery well, bottomed at 7,686 feet, is now making 60 bbls. of distillate daily, along with 4,000,000 feet of gas. Alamo is also drilling below 5,700 feet on No. 1 Neuhaus in the same field, both wells being for Means and McGehee.

Turnbull and Irwin have moved a rig into Fort Bend County where they will drill a 6,000-foot wildcat test in the Jessie Cartwright Survey, on the Herman Hospital estate 446-acre tract. Well will be for Turnbull and Irwin and others. The same contractors have abandoned the Brooks estate wildcat at Penn City on the Houston Ship Channel. This test was carried to 6,015 feet.

W. V. Bowles is drilling below 4,300 feet on a second well for Bowles and Barsodi in the Manvel Field, carried as No. 3 Norvell. A gas sand was logged between 3,642-47 feet. Bowles is also starting a rig for Texas Co. in the same field.

Steen Drilling Co. is drilling below 5,000 feet on a wildcat in Robertson County on a block of acreage held by the company. Same contractors are rigging up to drill a well for the Steinberger Petroleum Co. in the recently discovered field, 1 mile west of Port Lavaca, Calhoun County. The Steinberger well is located 3,000 feet west of the discovery well, which was completed by the Steen Drilling Co. on a block of acreage owned by the contractors.

C. & R. G. Drilling Co. is drilling at 4,250 feet on No. 2 Frank Truksa on Mustang Dome, Brazoria County, near Alvin. This well is for George Strake, who recently acquired the block of acreage on which it is located. Log shows entirely different formations than were encountered in No. 1 Truksa, being much harder in streaks, and resembling the formations encountered in the nearby discovery well in the Hastings Field, drilling for the Stanolind Oil & Gas Co. by Loffland Brothers, Oklahoma drilling contractors.

Jordan Drilling Co. is moving small rig on location to drill No. 3 Trinity State Bank in the Kittrell Field for Boone Brothers, being an offset to the Humble Oil & Refining Co. well which blew out and ran wild. Following the blowout, all wells in the field which had been flush producers stopped flowing. In the past 24 hours, however, No. 2 Trinity State Bank, one of Boone Brothers' wells which was placed on the beam, started flowing at the rate of 17 bbls. per hour.

Carlisle and Williams, who recently moved their gasoline rig into Bandera County to complete a 6,000-foot wildcat test started with cable tools by Gholson Drilling Co., have succeeded in repairing a part of the 1,000 feet of surface casing and are now drilling below 1,600 feet.

GULF COAST WATER SHIPMENTS, DECEMBER, 1934

Company and terminal—	Crude — Coastwise	Crude — Exports	Refined — Coastwise	Refined — Exports	Total
Atlantic Pipe Line Co.:					
Atreco	1,468,262.00	87,918.00	.....	17,764.00	1,573,944.00
Texas City	355,042.00	.....	6,691.00	.....	361,733.00
Harbor Island	522,149.00	.....	.....	.....	522,149.00
Gulf Refining Co.:					
Port Arthur	279,574.52	222,737.08	2,278,834.01	2,410.15	2,783,555.76
Humble Oil & Ref. Co.:					
Baytown	1,066,584.98	.....	2,532,642.09	282,499.72	3,883,726.79
Harbor Island	1,071,458.04	.....	.....	.....	1,071,458.04
Ingleside	66,395.52	.....	.....	.....	66,395.52
Texas City	376,872.06	.....	.....	.....	376,872.06
Magnolia Petroleum Co.:					
Beaumont	564,778.34	.....	2,471,795.30	.....	3,036,573.64
Pure Oil Co.:					
Smiths Bluff	375,288.00	.....	555,450.00	.....	930,738.00
Shell Petroleum Co.:					
Houston	205,655.40	.....	991,375.37	86,462.69	1,283,493.46
Norco	.....	.....	479,194.23	.....	479,194.23
Standard Oil Co. of La.:					
Baton Rouge	305,319.00	.....	1,218,683.00	387,410.00	1,911,412.00
Sun Oil Co.:					
Sabine Pass & Fun	3,116,659.00	.....	.....	.....	3,116,659.00
Texas Co.:					
Port Arthur	1,560,114.00	247,119.00	2,032,509.00	607,550.00	4,447,292.00
Miscellaneous:					
Houston	1,329,969.62	98,380.00	1,399,907.54	253,157.59	2,981,404.75
Total Dec., 1934	12,566,111.48	656,154.08	13,967,081.54	1,637,254.15	28,826,601.25
Total Nov., 1934	10,635,264.49	1,456,017.20	11,914,190.05	1,915,216.17	25,920,687.91
Difference	1,930,846.99	799,863.12	2,052,891.49	277,962.02	2,905,913.34

PROOF of its VALUE is in its ACCEPTANCE

One operator after another has become a regular user of this revolutionary barrel after learning by test its superior results over previous methods. Now they're getting the advantage of exclusive features like these:

1. Idling or non-rotating inner barrel to protect the core against distortion.
2. Internal core lubrication to enhance core passage.
3. Multi-diameter inner barrel assembly for increasing core clearances.
4. A unique core catcher assembly for diversified formation.

And they're getting greater recovery of geological data, just as it is in the formation!

Write for our Preventer Catalog

CAMERON IRON WORKS
INCORPORATED
HOUSTON, TEXAS, U. S. A.
Export: 74 Trinity Place, New York City.
District Representatives:
A. D. ENGLE, OKLAHOMA CITY, OKLA.
W. P. KNIGHT, MIDLAND, TEXAS
A. B. SMITH, LAFAYETTE, LA.

MISSION SLIPS
Positively do not mar pipe

Parts easily replaced on derrick floor

Also specify Mission Slips and Pistons

MISSION MANUFACTURING CO.
HOUSTON • TEXAS

Waller County Well Thought on Large Structure; Deeper Sand at Darrow; Deep Roanoke Test

By F. L. SINGLETON
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Feb. 18.—Stanolind Oil & Gas Co.'s No. 1 J. W. Thorp, a wildcat test in the J. M. Bennett Survey No. 100, southeastern Waller County, which opened a new producing area last week, when it made gas and distillate at a corrected plugged-back depth of 7,466 feet, is still being tested through various chokes, making from 880,000 to 3,180,000 feet of gas, with an estimated 150 bbls. of 58 gravity distillate per day. On a one-quarter inch choke on the tubing it made 3,180,000 feet of gas, with tubing pressure 2,475 pounds, and on a three-sixteenths inch tubing choke it tested 1,904,000 feet, with tubing and casing pressure 2,500 pounds. The last test was through a one-eighth inch choke, and it made only 880,000 feet, with tubing and casing pressure 2,515 pounds. Late in the week, the operators were installing a separator to make a test on the distillate output.

The test was originally drilled to the Cook Mountain formation at a total depth of 7,647 feet, but was plugged back and tested at its present depth (believed to be the upper Saline Bayou formation), after the operators had made an electrical coring test of the hole. Several showings of gas have been encountered at various horizons, and the operators may decide to plug back and test again before completing the well at its present depth.

The well is a unitized test, on a block of 2,480 acres, and was drilled after the block had been worked with reflection seismograph shooting. Interest in the block is divided among the following companies: Humble Oil & Refining Co., 29.03 per cent; Sinclair Prairie Oil Co., 12.9 per cent; Tide Water Oil Co., 3.25 per cent; Stanolind Oil & Gas Co., 25.81 per cent; Darby Petroleum Co., 3.2 per cent and Amerada Petroleum Corp., 25.81 per cent.

Several interesting wildcat tests have been drilled in the county, and all of them proved dry holes. The only production in the county, prior to the new discovery, is found on the San Felipe Dome (Brookshire) in the Miocene sand at a depth of approximately 2,960 feet. No. 1 Thorp is the second test to be drilled in the county by Stanolind Oil & Gas Co. Its No. 1 Manor, approximately 5½ miles north in Section 93, H.&T.C. Survey, was abandoned at a total depth of 6,713 feet, the past year. It is believed the discovery well is on a large structure, which is expected to lend to considerable drilling in this area within the near future.

Roanoke

Another deep test at the Roanoke Field, Jefferson Davis Parish, Louisiana, indicated production possibilities, when it tried to blow out at a total depth of 10,001 feet. It is Shell Petroleum Corp.'s No. 1 Jarnigan, an east offset to the discovery well in Section 12-9s-4w. While the operators were coming out of the hole with a core to 10,001 feet, the bottom 2 feet of which was soft sand, the well attempted to blow out, and is reported to have developed considerable pressure within a short time. The pressure caused the drill stem to stick, and the operators are now fishing. This is the second test to reach the 10,000-foot level within the past six weeks and is shy only 4 feet of becoming the deepest test to be drilled on the Gulf Coast. The other deep test which was abandoned a few weeks ago was Superior Oil & Producing Co.'s No. 1 Auguste Martinez in the Bosco Field, Acadia Parish, which was abandoned at 10,005 feet.

While this test was making a favorable showing, another deep test was given up as a failure. It is Humble Oil & Refining Co.'s No. 1 Jarnigan which was abandoned at a total depth of 9,870 feet. It is in Section 12-9s-4w. The company's No. 3 Devilbiss, southwest of the discovery well, which made its appearance as a possible deep producer from a total depth of 9,425 ft., three weeks ago, was plugged back to 9,330 feet and tested 90 per cent salt water. The operators have plugged back again to 9,318 feet and are waiting on cement to set.

Darrow Dome

On the Darrow Dome, Ascension Parish, Louisiana, Humble Oil & Refining Co.'s No. 2 Gumble revived interest in that area when it found a deeper sand from 5,751-81 feet, the total depth, and was completed for an initial production of 54 bbls. per hour through a three-eighths inch choke, with tubing pressure 80 pounds and casing pressure 810 pounds. It is in Section 33-10s-2e, and makes a short extension to the field.

Acreage on the dome is leased by Gulf Production Co., which farmed it out to three different companies, for an interest in any production developed. Up to the present, developing the dome has been disappointing, out of seven wells drilled only three made producers and two are still on production, making approximately 50 bbls. per day from depths of 4,600 and 4,800 feet.

Conroe

In the Conroe Field, Montgomery County, Humble Oil & Refining Co.'s No. 73 South Texas Development Co., an outpost test, located approximately 3,000 feet east of production, has pulled screen and liner and is drilling in shale below 5,082 feet, after it swabbed oil and some salt water at a total depth of 5,064 feet. The test was made after a showing of oil was encountered from 5,041-59 feet.

Manvel

At Manvel, northeastern Brazoria County, Gulf Production Co. and others have made location for their No. 1 T. L. Ellis on the west side of the field, in the H. N. Little Survey. It is being drilled on an 80-acre lease formerly held by Texas Co. Sterling Oil & Refining Co.'s No. 1 Gamble, an interesting outpost test on the northwest side of the field, is moving in the rig and is expected to be spudded by the middle of the week. The company made a deal with Allison, Gamble and Lancaster last week for approximately 200 acres on which the company is obligated to drill one well.

Fort Bend County

In the northern part of Fort Bend County, and northeast of the town of Richmond, Turnbull-Irwin and others are moving in material for their No. 1 Herman Hospital, located 100 feet from the east line and 350 feet from the south line of a 446-acre tract in the Jesse H. Cartwright Survey. It is located on a large block, that has recently been worked with geophysical instruments.

Galveston County

Considerable attention is being paid the Dickinson Field, Galveston County, where Humble Oil & Refining Co.'s No. 1 Danielson in the John Sellers Survey, approximately one-half mile southeast of No. 1 Maco Stewart, is coring in the Frio sand showing oil and gas at 8,043 feet. The first oil sand was reported topped at 7,649 feet and the second sand at 8,017 feet. It topped the Frio at 7,550 feet and is reported to be the "highest" test in the field. The company's No. 1 H. O. and W. G. Jones, 4,000 feet northeast of No. 1-B Maco Stewart, a producer in the J. O. Sherman Survey, is drilling in sand and shale below 5,600 feet. Southwest of the company's No. 1-B Maco Stewart, in the W. K. Wilson Survey, its No. 1 A. H. and E. H. Schaper, is below 6,954 feet in shale.

Polk County

South of Livingston, and in the western part of Polk County, J. W. Leggett and others' No. 1 Bergman is a new location and should be spudded during the week. It is located in the center of the east 144 acres of the Bergman 294-acre tract in the John T. Pinkney Survey.

Colorado County

In Colorado County, it is reported that Arkansas Fuel Oil Co., Gulf Production Co. and Humble Oil & Refining Co. have purchased acreage spreads from Danciger Oil & Refining Co. and L. E. Hultz for the deepening of their No. 1 Raver, which was abandoned last week at a total depth of 6,337 feet.

Harris County

W. U. Paul has made location for his No. 2 House in the extreme northeastern part of Harris County, and is drilling in shale below 1,515 feet. It is located approximately 100 feet north of his No. 1 House in the Mary Magruder Survey, which was abandoned a few weeks ago.

Hastings Field

At the Hastings Field, northeastern Brazoria County, Stanolind Oil & Gas Co.'s No. 1 J. W. Surface, the discovery well, which was killed the latter part of January due to gas pressure escaping out side of the 13⅜-inch casing and the 7-inch casing, ran a string of 5-inch casing, and set the packer at 5,937 feet. The operators circulated the test with oil after it had failed to flow after being washed with water, and the pressure built up to 1,700 pounds pressure on the 5-inch casing, with considerable gas showing up around the 7-inch casing. Late in the week the tubing was being pulled and it will be worked over again. The company's No. 1 Miller, approximately 2,000 feet east, cemented a protection string of 9⅝-inch casing at 4,223 feet and is waiting on cement to set at a total depth of 4,237 feet. East of the discovery its No. 1 Steve Paul is drilling in shale below 2,960 feet.

Gillis Field

More activity was assured the Gillis Field, Calcasieu Parish, Louisiana, when Fohs Oil Co. made location for three proposed tests on its 400-acre lease, out of

Wildcat Operations on Gulf Coast

Week Ended February 16

RACCOON BEND—AUSTIN COUNTY

Humble O. & R. Co.'s No. 15 Paine, 375 ft. from NW line, 418 ft. from SW line, Wm. C. White Sur.
Drlg. shale 3,916 ft.

Humble O. & R. Co.'s No. 1-B Machemehl. R.U. to W.O.

Humble O. & R. Co.'s No. 5-X McCasland, 419 ft. SE along NE line, 377 ft. at R.A. from NE line, Wm. C. White Sur.
T.D. 4,140 ft.; 7-in. csg. 3,973 ft.; I.P. 76 bbls. per hr.; tubing pressure 530 lbs.; csg. pressure 700 lbs.

Humble O. & R. Co.'s No. 9 Sherrod.
T.D. 4,140 ft.; I.P. 86 bbls. in 12 hrs.

Humble O. & R. Co.'s No. 11-X Woodley.
T.D. 7,061 ft.; P.B. to 6,566 ft.

DANBURY—BRAZORIA COUNTY

Shell Pet. Corp.'s No. 7 Blakely-Winston, 63 deg. 11 min. E. 5,540 ft. N, 26 deg 49 min. W, 200 ft. from SW cor. of Blakely-Winston 560-ac. tract, H.T.&B. Sur.
T.D. 6,253 ft.; to make electrical coring test.

Shell Pet. Corp.'s No. 3 Haury, 800 ft. SE of No. 2 in line with No. 2 and No. 1 Blakely-Winston, H.&T.B. Sur. No. 13.
T.D. 7,237 ft.; P.B. to 7,120 ft. to perforate csg.

DAMON MOUND—BRAZORIA COUNTY

Gulf Stream, Inc.'s No. 1 Cave Heirs, 160 ft. from N line and 60 ft. from E line of Lot C, Blk. 50, A. Darst Sur.
D.S. stuck 1,744 ft.

Esco's No. 1-D Wisdom, 25 ft. from S and W lines of Blk. D, Lot 5, A. Darst Sur.
S.D. 1,562 ft.

HASTINGS—BRAZORIA COUNTY

Stanolind O. & G. Co.'s No. 1 Wooten, 466 ft. S of N line, 466 ft. from SE line of 70-ac. tract, A.C.H.&B. Sur. No. 1.
Rig up.

Stanolind O. & G. Co.'s No. 1 W. J. Miller, 466 ft. out of SW cor. of the Miller 3,939-ac. tract, in A.C.H.&B. Sur. No. 2, 2,000 ft. E of discovery well.
9⅝-in. csg. 4,223 ft.; T.D. 4,237 ft.

Stanolind O. & G. Co.'s No. 1 Steve Paul, 476 ft. from the E line and 466 ft. from N line of 160-ac. tract, A.C.H.&B. Sur. No. 2, 2,100 ft. S of discovery well.
Drlg. shale 2,960 ft.

MANVEL—BRAZORIA COUNTY

Texas Co.'s No. 3 Gulf Coast Home Co., 347 ft. S. 441 ft. W from NE cor. of Lot 38, H.T.&B. Sur. No. 2-B.
Rigging up.

Bowles & Borsodi's No. 2 Norvell Investment Co., C of Lot 57, H.&T.C. Sur.
Location.

Bowles & Borsodi's No. 3 Norvell Investment Co., Blk. 46, H.&T.C. Sur. No. 23.
Drlg. shale and lime 4,160 ft.

Gulf Prod. Co.'s No. 1 T. L. Ellis, 330 ft. each way out of S cor. of 80-ac. lease, H. Little Sur.
Derrick.

J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 318, H. N. Little Sur.
Derrick.

E. H. Stone's No. 1 H. McCauley, 350 ft. from E line, 300 ft. from S line of Lot 2, A.C.H.&B. Sur.
Rig up.

Texas Co.'s No. 6 Ewing, 330 ft. N, 47 deg., 59 ft. W and 262 ft. S, 41 deg., 40 ft. W of SE cor. of lease.
16-in. csg. 43 ft.; waiting on cmt. to set.

Texas Co.'s No. 1 C. P. Dawson, 2,475 ft. S, 441.9 ft. W of NE cor. of Lot 59, H.T.&B. Sur. No. 23.
Drlg. gumbo and lime 3,020 ft.

Texas Co.'s No. 3 A.R.G.G.H. Co., in C of Lot 37, H.&T.C. Sur. No. 23.
Drlg. shale and lime 2,546 ft.

Texas Co.'s No. 10-A Belcher, N 42 deg. E 330 ft. and N 48 deg. W 330 ft. from S cor. of Belcher "A" lease, H. N. Little Sur.
Drlg. sandy lime 5,016 ft.

Texas Co.'s No. 17 Houston Oil Fields Assn., 244 ft. S, 244 ft. W, from NE cor. of Lot 1, A.C.H.&B. Sur. No. 91.
Location.

Texas Co.'s No. 16 Houston Oil Fields Assn., 247 ft. S, 440 ft. E from NW cor. of Lot 19, A.C.H.&B. Sur., No. 91.
Location.

Texas Co.'s No. 1 J. L. Lemmer, 330 ft. S 48 deg. E and 330 ft. N, 42 deg. E of W cor. of lease, Thomas Sproggins Sur., Abst. A-366.
Drlg. shale and lime 4,215 ft.

Texas Co.'s No. 2 Dawson, 247 ft. S, 241 ft. W of NE cor. of Lot 58, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 1 L. C. Dawson, 247 ft. S, 441 ft. W of NE cor. of Lot 49, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 2 Dawson, 247 ft. S, 441 ft. W of NE cor. Lot 48, H.T.&B. Sur. No. 23.
Location.

Trumba Oil Co.'s (J. M. Campbell) No. 1 H. McCauley, 150 ft. each way out of NE cor. of W 5 acres of Lot No. 2, A.C. H.&B. Sur. No. 91.
Location.

STRATTON RIDGE—BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 6 Seider & State, 225 ft. due N of No. 3.
Drlg. shale 2,472 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Sterling O. & R. Co.'s No. 4 Hogg, 200 ft.

(Continued on Page 113)

the 815-acre O. H. Castle tract, on which the company completed its No. 1 Castle last week from a new horizon at a depth of 7,065 feet. Location for No. 2 Castle is located at the center of the NE Section 14-9s-8w, and is a quarter of a mile southwest of its No. 1, on the Mrs. Ida Wasey lease. Due east of the producer, its No. 3 is near the north line of the NW Section 13-9s-8w. No. 4 Castle is located 330 feet south and 330 feet west of the C Section 13-9s-8w.

Proration restriction of the State has given the well an allowable of 21 bbls. per hour, and the test is producing at this rate through a three-sixteenths inch choke with tubing pressure 1,125 pounds and casing pressure 1,125 pounds. It came in for an initial production of 58 bbls. per hour. The oil is being taken temporarily by the Union Sulphur Co.

While the above test was being completed, Union Sulphur Co.'s No. 1 Powell Lumber Co. reached the oil sand and is now waiting on cement to set at a total depth of 6,742 feet. Seven-inch casing was cemented at 6,737 feet, the top of the oil sand, which is the discovery horizon for the field. It is due to be tested the first part of the week. The Humble Oil & Refining Co. and Magnolia Petroleum Co. are reported to have purchased considerable acreage in the area the past week.

Bosco

Another important extension has apparently been made at Bosco Field, Acadia and St. Landry Parishes, by Superior Oil Producing Co.'s No. 2 M. Kahn, an outpost test in the extreme southwest part of the field. Saturated sand was cored from 8,720-33 feet, the total depth, and the operators are preparing to run tubing, after 7-inch casing had been cemented at 8,720 feet. It is approximately 1,500 feet southwest of the company's No. 1 Malancon, a producer, and 1,000 feet northwest of its No. 1 Kahn, that was abandoned as a dry hole at a total depth of 7,745 feet.

National Scouts to Corpus Christi in March

HOUSTON, Tex., Feb. 18.—The executive committee of the National Oil Scouts Association of America held its annual meeting in Houston the past week and decided to hold the annual Scout convention at Corpus Christi, March 20-21.

The yearly Scout book, for 1935, published by the association is to be available in March. Those interested in the oil industry are eligible for membership in the association and each member will receive a copy of the bulletin.

All members of the executive committee were present: J. E. Beall, Gulf Production Co., Houston, president of the association; J. A. Bonham, Magnolia Petroleum Co., Lake Charles, La., first vice president; P. G. Booth, Humble Oil & Refining Co., Cisco, Tex., second vice president; and Elton Rhine, Empire Gas & Fuel Co., chairman of the executive committee. Out of town guests included J. S. Fox, Arkansas Fuel Oil Co., representing the East Texas district; Tom H. Terry, Texas Co., representing the Southwest Texas district; Dwight L. Becker, chairman of the Houston check meeting, and George C. Robinson, chief scout for the Pure Oil Co.

Geological Society of Kansas Meets in Wichita

The Kansas Geological Society, Wichita, Kans., will entertain the twentieth annual meeting of the American Association of Petroleum Geologists in Wichita, March 21, 22 and 23. The national officers are: William B. Heroy, New York, president; Frank R. Clark, Tulsa, past president; Edwin B. Hopkins, Dallas, Tex., vice president; M. G. Cheney, Coleman, Tex., secretary-treasurer; L. C. Snider, New York, editor; J. P. D. Hull, Tulsa, business manager.

The Kansas geological convention committee consists of the general committee: E. C. Moncrief, chairman, J. L. Garlough, Everett L. Bradley and Fritz L. Kurin; entertainment committee, Howard S. Bryant, chairman; program committee, Dr. Walter A. VerWiebe, chairman; registration committee, Marvin Lee, chairman; equipment committee, J. P. McKee, chairman; publicity committee, L. R. Fortier, chairman, and reception committee, E. P. Philbrick, chairman.

The headquarters will be at Allis Hotel. The entertainment committee has planned for a nationally known lecturer on the evening of March 21 at a meeting open to the public. Two field trips, one into a salt mine, the other over the geologic section in eastern Kansas are planned.

David A. Upham Dies; Oil and Gas Pioneer

D. A. Upham, president of the Brazos River Gas Co., died at his home in Mineral Wells, Tex., recently. He was born near Truro on the Bay of Fundy, in Nova Scotia, in 1864. During his boyhood days he assisted his father on his

D. A. UPHAM

farm in Nova Scotia, and when about 17 went to Pennsylvania and engaged in the oil business in Pennsylvania and West Virginia. He was familiar with the first gas line laid in the United States, which was made of wood. He later sold his oil and gas interests in West Virginia and Pennsylvania and moved to Ohio, where he built a gas system at Mount Vernon, Ohio, which began operating about 1905 as the Upham Gas Co. of Ohio. Mr. Upham remained president of this company until 1926 when he sold it to his sons, J. A. and S. P. Upham of Mount Vernon, Ohio. In 1917 he went to Mineral Wells, Tex., and engaged in the gas business. In 1921 he purchased the Consumers Gas Co., serving gas to the cities of Mineral Wells and Weatherford, and later purchased the Texas Distributing Co., serving Mineral Wells. These properties were operated under the name of the Upham Gas Co. of Texas.

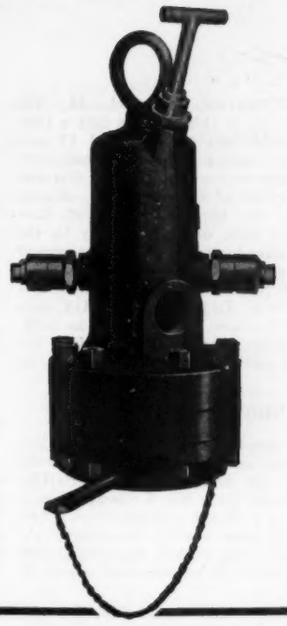
In 1925, Mr. Upham conceived the idea of building a gas line from Wheeler County through Wellington, Childress, Quanah, Vernon, to Wichita Falls, and assisted by his son, Chester R. Upham, the line was completed in 1927 as the Northern Texas Utilities Co. This line was sold to the United Gas Co. in 1930. The Upham Gas Co. sold its gas distributing systems and pipe lines to the Brazos River Gas Co., of which Mr. Upham was president, his son, Hobart R., being his assistant.

GIDEON H. SCOTT DIES

PETROLIA, Ontario, Feb. 16.—Gideon Henry Scott died here on February 12 after a brief illness, aged 59. Mr. Scott was connected with the Canadian oil industry for many years, at first with the late J. H. Fairbank at Oil Springs and later with the Canadian Oil Cos., Ltd., refinery at Petrolia.

Proved

By years of Fieldservice under widely varying conditions to be safe, efficient and of long durability



GRANT CEMENT HEAD

A TIGHT JOINT IN 30 SECONDS

Lightning-fast locking device helps complete cementing jobs in least possible time and with least danger in emergencies.

Available in Ball or Screw types—with or without plug holder.

Grant Type "C" *Rotary* Underreamer

This versatile tool, made by the world's recognized underreamer specialists is used and endorsed by the foremost men in the oil industry.

An unusually large cutting surface is assured by the design of the Grant roller cutters used in this tool. Smooth rollers may be substituted for cutters and tool used as an expanding casing roller.

Send for Catalogues.

GRANT OIL TOOL CO.

2042 E. Vernon Ave. Los Angeles

Eight Wells and Five Failures Comprise Week's Record in North Louisiana and Arkansas

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Feb. 18.—The four districts in this division had a total of 14 completions and reported 17 new operations during the past week, the North Louisiana and Arkansas districts furnishing all of the producers. Mississippi and the border counties of East Texas had little drilling activity in the wildcats already spudded in, but reported several new operations that will add impetus to further development in those districts. North Louisiana and Arkansas continue at about an even pace in drilling operations, about equally divided between old proven fields and wildcat territory.

NORTH LOUISIANA

Eight completions comprised the list in this area consisting of four oil wells and four dry holes. In Caddo Parish, Gulf Refining Co.'s No. 6 Chew, Section 33-21-16, is a 25-bbl. pumper from 1,840 feet. In the same section this company's No. 3 Chew was junked and abandoned at 1,420 feet with an old total depth of 2,050 feet.

The third Caddo completion, Louana Oil & Gas Co.'s No. 2-B Hammock, Section 5-18-16, in the Blanchard gas area, was abandoned as dry at 1,008 feet. In a limited productive area of DeSoto Parish, Bayou-Pierre Oil Co.'s No. 1 B. Y. Wemple, Section 14-12-11, is pumping 12 bbls. of pipe line oil daily from a total depth of 2,731 feet.

The Urania Field in LaSalle Parish, which still produces over 3,000 bbls. of oil daily, reported two small pumpers. J. B. Collins, trustee's No. 2 Urania Lumber Co., Section 7-10-2e, is making 20 bbls. daily from 1,528 feet, and Fred Graham's No. 1 Urania Lumber Co., Section 18-10-2e, is a 25-bbl. pumper from 1,521 feet. Both wells are making salt water, which was to be expected at this stage of the field's development.

Sterling Oil & Refining Co.'s No. 1 Long Bell Lumber Co., Section 19-13-9, a wildcat in Red River Parish, was dry and abandoned at 2,828 feet. In Sabine Parish, R. B. Campbell's No. 1 Cook Land Co., Section 35-10-12, after failing several months ago to get production from 1,935 feet, using acid in the chalk rock, was abandoned as a dry hole at 2,130 feet.

Three Wildcats of Interest

At least three of the eight new locations staked in the North Louisiana district are wildcats of more than passing importance. About 7 miles south of the Zwolle Field, Sabine Parish, M. T. Hines is rigging up on his No. 1 J. B. Hill in Section 4-6-11. The test is located on a block of several thousand acres, but there is no information at this writing on the contract depth. In DeSoto Parish, Hester and others' No. 1-A T. R. Alston, Section 11-11-16, has set 10-inch surface casing. This is the second attempt in this area for this operator, a test was recently junked when the drill stem stuck.

Eight miles northeast of the town of Natchitoches in Natchitoches Parish, Edwards and Turner of Houston, Tex., have completed a block of approximately 5,000 acres and staked location for No. 1 Prudential Life Insurance Co. in Section 26-10-6. A derrick has been erected on location and it is reported that the contract calls for a 3,000-foot test.

In Bossier Parish, 2 miles east of the town of Benton, Clyde French is rigging up a gasoline rig for a shallow test on his No. 1 Hall, Section 28-20-13. An attempt will be made by the Texas Trading Co. to extend gas production in the Blanchard area, Caddo Parish, 1½ miles to the north. The crew is rigging up on its No. 1 A. T. Curry in Section 28-19-16.

Frank R. Foster, Inc.'s No. 1 N. Phillips, Section 16-9-11, in the Spring Ridge area of Sabine Parish, has set 10-inch surface casing at 40 feet and is drilling at 2,710 feet. This test will be closely watched, as it is in the immediate vicinity of several wells drilled within the last three years with varied degrees of success. The new test is a short distance east of Langbridge Oil Co.'s No. 1 Stevens, brought in about three years ago and flowing consistently by heads about 30 bbls. of oil daily since its discovery.

Other Wells Drilled Deeper

Other wells drilled in the vicinity by the operators of the present test drilled deeper than the discovery well into the Washita and Fredericksburg sands. One of the tests, completed as a 14,000,000-foot gasser from the Washita horizon between the Woodbine and upper Trinity, was deepened in an effort to make an oil well of it and encountered salt water. The pay horizon is between 3,600 and 3,800 feet. Other wells drilled in that area made good showings on drill stem tests, but failed to produce consistently on test after casing was set.

The so-called Spring Ridge area is about 4 miles south of the town of Pleasant Hill and about 6 miles southeast of the small field of the same name.

In the central part of the State, Avoyelles Parish, Southern Star Petroleum Co.'s No. 1 O. G. Boyette, Section 28-3-5e, has set 8-inch casing at 1,735 feet and is drilling at 2,400 feet. A show of gas was reported at the depth at which casing was set, but there is no report on whether or not the well was tested at that depth.

A DeSoto Parish wildcat a few miles southwest of the old Spider area developed shows during the past week that will bear watching. Century Oil & Gas Co.'s No. 1 J. M. Morton, Section 27-11-14, blew out an estimated 2,000,000 feet of gas, bridged over and is now flowing by heads with a spray of salt water. Four feet of sand was penetrated to a total depth of 2,825 feet.

ARKANSAS

The Rainbow Field in Union County had three producers out of as many completions. The whole South Arkansas district recorded five completions, four of them oil wells and one dry hole. In the Rainbow area, the best well of the week was S. H. A. Oil Co.'s No. 5 Taylor in Section 10-17-14. The well, drilled by the discoverers of the deeper pay in the red beds, is flowing 800 bbls. daily through one-quarter inch choke and 4 feet of sand bottomed at 3,343 feet. In the same section, T. L. James & Co.'s No. 1-A E. F. Gregory is flowing 100 bbls. of oil with 5 per cent salt water from 3,390 feet. The third producer in this area, Skelly Oil Co.'s No. 7 Perdue, Section 10-17-14, is a 100-bbl. pumper with a small amount of salt water from 3,380 feet. Durand Development Co.'s No. 1 H. Ezzell, Section 13-17-15, was dry and abandoned at 3,512 feet. In the Miller County Field east of Texarkana, Magnolia Petroleum Co.'s No. 6 Olivet, Section 3-16-26, was completed pumping 165 bbls. from 2,938 feet.

None of the wildcats in this district developed anything of interest, but indications are that the area will experience plenty of activity in the near future. Rumors are rife that extensive drilling will take place in two or more of the old proven areas, particularly in the Smackover Field.

An Arkansas County wildcat, Grand Prairie Realty Co.'s No. 1 Fischer, Section 6-6s-4w, is making fair progress, drilling at 2,500 feet. Lafayette County continues to get a good wildcat play, one that has been steadily in progress during the past two years. Kamon & Neely's No. 1 Cockran, Section 26-19-25, is temporarily shut down for rig repairs at 1,700 feet but will resume during the week. Riggs Brothers' No. 1 J. W. Dubose, Section 35-15-24, has set 10-inch at 100 feet on a recently staked location. In the old Bradley Field, W. H. Harvey's No. 2 Allen, Section 18-19-24, is arranging to resume drilling from 850 feet.

In the hot spot of Ouachita County, about 5 miles west of Camden, Kraft Oil Co.'s No. 1 Rath & Cartier, Section 32-13-17, set 10-inch at 41 feet and cored 6 feet of sand from 1,420-26 feet. The wildcat, which is about 3 miles southeast of the one producing well in that area, is arranging to make a drill stem test.

One new location was announced in the Camden area, J. D. Reynolds' No. 1 M. Bragg, Section 25-13-18, an offset to the west of the discovery well.

Only two other new locations were staked in the Arkansas district during the past seven days. Just east of the El Dorado city limits, Gordy Drilling Co.'s No. 1 Craig, Section 35-17-15, has set 12½-inch casing at 105 feet and is drilling at 1,620 feet. The other location was in the Rainbow Field.

MISSISSIPPI

Snow-Black Petroleum Co.'s No. 2 Watson, Section 24-7n-13w, Jones County, was the only completion from this district, junked and abandoned at 3,900 feet. Practically all of the wells are inactive at present, but three new operations were announced to bolster up an otherwise dull period. In Warren County, on an island near Vicksburg, Harry W. Elliott and others spudded in the last day of January on No. 2 R. L. Parker in Section 14-14n-1e. The test, which is the second in this immediate vicinity for the same operators, is drilling in gumbo at 600 feet. The Snow-Black Petroleum Co.'s second test in Jones County, No. 1 Fox, Section 30-7n-12w, is rigging up. In the Hinds County area of the Jackson Field, Bob Weaver is rigging up on his No. 1 Trussell & Oparka, in Section 26-6n-1e. A wildcat in Winston County, Jack Vale and others' No. 1 Moody, Section 3-13n-14e, has resumed operations after a shutdown and is drilling in black shale at 790 feet.

FLORIDA

Two wildcats in separate counties in Florida are making good progress. Ray L. Easterbrook's No. 1 T. R. Miller Land Co., Section 1-4n-12e, is drilling in red shale at 4,300 feet. The test is in Conecuh County. In Covington County, Geometer Production Corp.'s No. 1 A. B. Culbreath, Section 8-2n-14e, is drilling in chalk rock at 2,700 feet.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Southern Star Pet. Co.'s No. 1 O. G. Boyette, Sec. 28-3-5e.
Set 8-in. 1,735 ft.; drlg. 2,400 ft.

BIENVILLE PARISH

Saline Drlg. Co.'s No. 1 Pardee, Sec. 27-14-6.
S.D. 2,670 ft.

BOSSIER PARISH

Ark.-La. Gas Co.'s No. 1 R. O. Roy, Sec. 18-17-11.
Drlg. 2,574 ft.

Howard & Baird's No. 1 Gold, 150 ft. S and E. NW cor. Sec. 36-20-13.
S.D. 1,126 ft.

W. A. Kirkland's No. 1 Jarrett & McKeller, 330 ft. N and W. S cor. NW NW Sec. 3-21-13.
Arranging to resume drlg. 43 ft.

Leonard Co.'s No. 1 Pearson, 250 ft. S and E. of C Sec. 22-21-14.
S.D. for fuel 2,408 ft.

Scott & Howard's No. 1 Sherrill, Sec. 13-19-12.
Partly rigged up and S.D.

R. L. Skidmore et al's No. 1 Davis, Sec. 12-18-13.
S.D. 1,028 ft.

CADDO PARISH

Ark.-La. Gas Co.'s No. 2 Rodessa O. & Devel Co., Sec. 23-23-16.
Drlg. 2,425 ft.

E. H. Bailey et al's No. 1 Hartzo, NW cor. NE NW Sec. 28-22-16.
Rigging up.

W. T. Bell et al's No. 1 Bostick, 1,820 ft. E. 660 ft. N, SW cor. Sec. 12-22-16.
Tested dry; S.D.; W.O. 2,717 ft.

Cal.-La. Devel. Co.'s No. 1 Glassell, NW NE Sec. 11-19-15.
Set 10-in. 40 ft.

Gulf Ref. Co.'s No. 7 Chew, 945 ft. N, 200 ft. E of C Sec. 33-21-16.
Set 10-in. 95 ft.

Gulf Ref. Co.'s No. 3 Chew, Sec. 33-21-16.
Junked and abd. 1,420 ft.

A. D. King, tr.'s No. 1 Roach, 641 ft. E. 275 ft. N, SW cor. SE Sec. 4-14-16.
S.D. 2,128 ft.

Meyers et al's No. 1 Davidson, 790 ft. W. 200 ft. S, NE cor. SE Sec. 16-20-15.
Rigging up.

Press & Lambert's No. 1 Hughes, Sec. 15-20-15.
Drlg. 1,250 ft.

Recovery Oil Co.'s No. 1 W. L. Sibley, Sec. 15-19-14.
Set 10-in. 100 ft.; drlg. 975 ft.

Recovery Oil Co.'s No. 1 W. L. Sibley, Sec. 15-19-14.
Drlg. 975 ft.

G. R. Stevens' No. 2 Hart, Sec. 22-21-16.
Derrick.

Texas Co.'s No. 3 School fee, Sec. 16-20-15.
Derrick.

Shreveport Oil Corp.'s No. 4-C Muslow, 1,720 ft. E, 100 ft. N, SW cor. Sec. 4-20-16.
W.O.S.R. 2,160 ft.

Texas Trading Co.'s No. 1 A. T. Curry, 660 ft. N and E, SW cor. NW Sec. 28-19-16.
Rigging up.

(Continued on Page 115)

Average Daily Production

Estimated daily gross production, all companies, week ending February 15, is as follows:

NORTH LOUISIANA

	Bbls.
Bellevue	485
Caddo, light	4,785
Caddo, heavy	1,755
Converse	1,145
Cotton Valley	455
DeSoto and Red River	1,470
Elm Grove	390
Haynesville	3,550
Holly	160
Homer	2,665
Pleasant Hill	190
Sarepta-Carterville	540
Urania	3,210
Zwolle	2,095
Total	22,895

SOUTH ARKANSAS

Champagnolle	3,020
El Dorado	2,210
Lisbon	315
Miller County	1,890
Nevada	845
Smackover, light	2,175
Smackover, heavy	17,985
Stephens	510
Urbana	2,150
Total	31,030

More Big Wells Are Completed in Fitts Pool, But Their Daily Production Is Severely Curtailed

By JAMES McINTYRE

The past week in review in Oklahoma was one of few completions and a brief let-down in the number of new operations started. Results were largely routine. Production increased from 455,525 bbls. per day to 507,075 bbls. per day, the increase coming from the Oklahoma City and Seminole Fields.

Stanolind Oil & Gas Co.'s No. 4 Norris, SW NW SE Section 25-2-6, in the Fitts Pool in Pontotoc County, was the largest initial producer of the week starting at 736 bbls. the first hour or at the rate of 17,664 bbls. per day, from McLish lime at 4,289-4,316 feet. As an indication of the tight curtailment of the Fitts Pool it need only be mentioned that this one well could have produced more in 24 hours than the daily average production of all the half hundred wells in the field last week, their combined production having averaged only 11,825 bbls. per day.

Early Oil History

In connection with the current busy leasing play in Atoka County, in the southeastern part of the State, some historian has dug up the fact that oil was discovered in Atoka County before Drake well near Titusville, Pa., was started. R. B. Flack, searching for coal deposits in the Choctaw Nation in 1858, is credited with having drilled a hole in Section 6-2s-12e, about 4 miles northeast of the Choctaw Indian trading post at Atoka. At a depth of 120 feet, the record shows, oil rose to the top of the hole. Flack filled the hole with stones and moved away. This location was found four years ago, and it is said that when the top soil was removed gas seeped through the stones. Nine lease blocks have been assembled in the county in the recent leasing campaign that followed the Graben leasing campaign in Pontotoc, Coal, Johnson and Murray Counties, and which extended to the southern border counties.

The Tide Water Oil Co. is the latest of the major companies to enter the Fitts area, that company having purchased a spread of leases in Sections 26, 27, 34 and 35, Township 1n-7e.

Abandon a Garvin County Test

Anderson & Kerr and others will abandon their test in the Paoli district in Garvin County, No. 1 Riley, SE SE NW Section 2-4n-1w, at 5,777 feet and were moving out equipment. Wilcox sand was dry.

Time Extended

Operators with wells in the Wilcox zone of the Oklahoma City Field which had underage credits which otherwise would have been subject to cancellation February 1 will be given until April 1 to produce the oil, or at least to show production of a substantial amount of such underage. One of the ambitions of the proration department is to work out some plan for elimination of the large underage figures hovering over the production and allowable picture of the Oklahoma City oil field.

Protest Excessive Tax

Meetings were held in Duncan, in southern Oklahoma, and Blackwell in the northern part of the State, protesting against the action of the lower house of the state legislature in passing the bill increasing the gross production tax from 3 per cent to 8 per cent. Merchants and others joined with oil producers and royalty owners in resolutions calling upon the senate to kill the measure. The objectors called particular attention to the fact that such a tax would take all the profit out of producing oil from any but flush wells and that if it is passed and put into effect many small wells in the State would have to be abandoned. As whole communities would be affected detrimentally by the passage of the measure business men generally in the old settled production districts are as earnest in their opposition to the bill as the oil men themselves.

In the Fitts Pool

In the Fitts Pool, Pontotoc County, Loual Drilling Co. completed its No. 3 Craddock, SW NE NE Section 25-2-6. It flowed 125 bbls. in a 24 hour test. It had been shot at 4,155-4,235 feet.

Stanolind Oil & Gas Co. completed No. 3 Norris Royalty Co. NE SW SE Section 25-2-6, which flowed 583 bbls. the first hour with gas at the rate of 5,000,000 feet per day. Bromide sands were topped at 4,155 feet and 4,220 feet and McLish at 4,275-84 feet, total depth.

Crosbie & Moran's No. 4 D. Hardin, SE SW NE Section 30-2-7 flowed 2,040 bbls. in five hours through casing and tubing, from McLish at 4,216-30 feet.

Stanolind Oil & Gas Co. and others' No. 5 Hardin, SW NW SW Section 30-2-7 was completed. It flowed 1,112 bbls. in four hours through casing and tubing from McLish at 4,212-20 feet.

New work in the field included Loual Drilling Co.'s No. 7 Norris, NW SW NE Section 25-2-6, location; Moore and others' No. 5 Smith, SW NE NE Section 36-2-6, location; No. 6 Smith, SE NE NE Section 36, location; Manahan Drilling Co. and others' No. 3 Reynolds-Wagner, NE NE SE Section 18-2-7, location; Moore and others' No. 2 Craddock, SW NW SW Section 29-2-7, cellar and pits; No. 3 Craddock, NW SW SW Section 29, and No. 4 Craddock, SW cor., cellar and pits, Carter Oil Co.'s No. 9 Richards, SE NE SE Section 30-2-7, building rig.

The Sledge and Lynch test No. 1-A Thompson, SW NE SW Section 1-1-7, was shot with 165 quarts of nitroglycerin at 4,300-80 feet, and the casing collapsed. This test had been plugged back from 4,656 to 4,547 feet and then filled with rock to 4,380 feet.

Estimated Production

Estimated production by pools in Oklahoma for the week ended February 16 and for the preceding week follows:

	Barrels	
	Feb. 16	Feb. 9
Allen	8,400	8,600
Asher-West Asher	1,400	1,425
Burbank	8,800	8,800
South Burbank	10,000	10,000
Balance of Osage	27,000	27,000
Blackwell	4,800	4,800
Bristow-Slick	9,500	9,500
Chandler	6,000	6,000
Crescent	4,475	4,025
Cromwell	4,400	4,425
Cushing-Shamrock	12,750	12,900
Duncan district	4,150	4,150
Fish	7,850	7,550
Fitts	11,825	11,375
Gray	2,225	1,250
Graham	3,600	3,600
Healdton	9,100	9,100
Hewitt	4,800	4,800
Holdenville	2,000	2,050
Keokuk	1,775	1,700
Konawa	2,550	2,450
Lucien	9,050	7,350
Marshall-Lovell	1,000	1,000
Oklahoma City	159,525	130,475
Papoose	1,300	1,300
Polo	6,700	5,200
Sasakwa and Townsite	2,450	1,625
Sholem-Alechem	4,000	4,000
Seminole Field:		
Bowlegs	12,050	10,450
Carr City	6,375	4,650
Earlsboro	9,075	8,250
East Earlsboro	8,250	7,200
South Earlsboro	1,050	750
Little River	14,575	11,450
East Little River	975	625
Maud	1,600	1,650
Mission	3,600	2,775
Seminole	10,575	9,075
East Seminole	1,200	1,075
Searight	4,000	3,250
Total Seminole	73,325	61,200
St. Louis-Pearson	24,675	20,475
Tatums	5,000	4,750
Tonkawa-Garber-Thomas	6,000	6,000
Wewoka	4,000	4,000
Yale-Jennings	4,750	4,750
Other pools	57,900	57,900
Total Oklahoma	507,075	455,525

Logan County

Amerada Petroleum Corp.'s No. 2 Denny, NE SE SE Section 33-17-4w, in the Crescent Pool, Logan County, made 864 bbls. in 24 hours in a potential test, producing from Wilcox sand at 6,149-67 feet.

Helmerich & Payne and others' No. 1 Sturgis, SE SE SW Section 1-15-2w, a test on a unitized block of acreage, was dry and abandoned at 6,175 feet. Wilcox sands were penetrated at 6,044 feet and 6,135 feet. A core taken at 6,175-85 feet of which 7½ inches of core was recovered and it was white and salty.

Lincoln County

Twin State Oil Co.'s No. 2 Cook, NW SW SW Section 1-14-3, West Chandler area, Lincoln County, plugged back from 5,068 feet and shot down at 4,265 feet flowed 260 bbls. of oil and 115 bbls. of water in 24 hours.

Magnolia Petroleum Co.'s No. 2 Wagner, SE cor. Section 2-14-3, plugged back from 4,278 feet and shot at 4,244-76 feet, flowed 155 bbls. of oil in 24 hours.

Tom Bennett and others' No. 1 Bolby, C SE SW Section 27-12-2, in southwestern Lincoln County, has been temporarily abandoned with the hole at a total depth of 5,081 feet. It is not deep enough to prove anything. Prue sand was topped at 5,030 feet. It has been shut down since November.

Greater Seminole

Carter Oil Co. and others' No. 1 McKinnis, C E half SE SW Section 18-10-6, North Searight Pool, Seminole County, was completed. It swabbed 1,695 bbls.

Wildcat Operations in Oklahoma

Week Ended February 16

NORTHERN OKLAHOMA

BECKHAM COUNTY

Fred Coogan et al's No. 1 Shelton, SW cor. Sec. 33-10-25w.
Drlg. 1,650 ft.

CADDO COUNTY

H. W. Lee et al' No. 1 Ferriee, SW NE NE Sec. 3-6-13w.
Drlg. 1,960 ft.

H. W. Lee et al's No. 1 Stacey Ferrell, SW NE NE Sec. 3-6-13w; (2,000-ft. test).
Drlg. 1,790 ft.

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w.
T.D. 11,230 ft.; C.O. to 10,000 ft.; flowing by heads 100 bbls. oil every other day.

CLEVELAND COUNTY

Sinclair Prairie et al's No. 1 Franklin, SE NW SE Sec. 21-10-2w.
Drlg. 2,257 ft.

COAL COUNTY

J. D. Petty Oil Co.'s No. 1 McMillian, SW NW NE Sec. 16-1s-8.
Running 6-in. csg. at 1,110 ft.

GARFIELD COUNTY

Herndon Drlg Co. et al's No. 1 Allen, NE NE SW Sec. 35-24-3w.
12½-in. pipe set 100 ft.

GARVIN COUNTY

Anderson & Kerr's No. 1 Riley, SE SE NW Sec. 2-4-1w (5,800-ft. test).
Drlg. 4,850 ft.

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, C NW SW SE Sec. 5-4-3e.
Set surface pipe.

National Prod. Co.'s No. 1 Littrell, NE NE NE Sec. 21-2-3w.
Drlg. 1,120 ft.

George L. Pace's No. 1 Smith, SW NE Sec. 35-1-1.
Location.

George Pace et al's No. 1 Smith, SW SW NE Sec. 35-1n-1e.
Moving in material.

GRADY COUNTY

Carter Oil Co. and Magnolia Pet. Co.'s No. 1 Harrison C-34, C NW NW Sec. 28-3-5w
T.D. 5,963 ft.; cmt. plug placed at 5,200-5,450 ft.

GRANT COUNTY

Helmerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-8w.
T.D. 6,030 ft.; R.U. cable tools.

HUGHES COUNTY

Amerada Pet. Corp.'s No. 1-A Adams, NE NE SW Sec. 31-9-9.
12-in. pipe set 108 ft.

Dandridge & Crane's No. 1 Mead, NW NW NE Sec. 17-5-9.
Drlg. 950 ft.

Freeman et al's No. 1 Kite, NW NW NE Sec. 3-6-10.
Set 5-in. csg. 598 ft.

Turner et al's No. 1 Williams, SW cor. Sec. 35-7-10.
S.D. at 538 ft.

KAY COUNTY

Harris & Haun's No. 1 Schuessler, C NW SW Sec. 3-28-2.
10-in. csg. 2,050 ft.; repairing rig.

Bay Oil Co.'s No. 1 Holden, SW SW SE Sec. 14-28-3.
5-in. 2,945 ft.; drlg. plugs.

S. R. McCorkle et al's No. 1 Smith, SW cor. Sec. 6-26-4.
S.D. 457 ft.

KINGFISHER COUNTY

Black Gold Oil Co.'s No. 1 Cole, C SW NE Sec. 24-18-5w
Drlg. 6,050 ft.

LINCOLN COUNTY

Derrickson and Reserve Pet. Co.'s No. 1 Law, SE SW NE Sec. 25-14-3.
Location abd.

Chester L. Carlock's No. 1 Young, C N½ NW NW Sec. 23-15-5.
Rig.

Sinclair Prairie Oil Co.'s No. 1 Hoyt, NW SW NE Sec. 5-14-3.
Wilcox sand 5,062-71 ft.; shot at 5,047-71 ft.; swbd. 105 bbls. in 22 hrs.

Slick-Urschel's No. 1 Miller, NW SE Sec. 25-15-3.
Location.

LOGAN COUNTY

Helmerich-Payne et al's No. 1 Sturgis, SE NW Sec. 1-15-2w.
First Wilcox 6,044 ft.; second Wilcox 6,135-75 ft.; dry and abd.

Shell Pet. Corp. et al's No. 1 Hirzel, SE SW SW Sec. 7-16-2w
Chatanooga 5,455 ft.; cored 5,479-95 ft.

Sinclair Prairie and Slick-Urschel's No. 1 Koatsch, SW cor. Sec. 23-15-3w.
Drlg. 1,925 ft.

Sinclair Prairie Oil Co. et al's No. 1 School Land, SE cor. Sec. 36-17-1w.
Simpson dense 5,255 ft., T.D.; waiting for pipe line connection.

Slick-Urschel et al's No. 1 Pennington, C SW NE Sec. 10-16-1w.
T.D. 144 ft.

J. C. Schaffer et al's No. 1 Cronkite, SE SE SW Sec. 10-15-4w.
15½-in. pipe at 207 ft.

McCLAIN COUNTY

C. W. James et al's No. 1 Neal, C NW SE SW Sec. 4-5-3.
Hunton 3,335-37 ft.; running 8-in. csg.

NOBLE COUNTY

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Sec. 24-22-2.
Wilcox sand 4,449 ft.; T.D. 4,480 ft.; flowed 392 bbls. in 21 hrs. after shut in 47 hrs.; Gulf P. L. Co. laying line to well.

OKFUSKEE COUNTY

Amerada Pet. Corp.'s No. 1 Jaynes, NW NW SW Sec. 20-10-10.
Wapanucka 3,170 ft.; drlg. 3,229 ft.

Mid-Continent Pet. Corp.'s No. 1 Haney, SW SE NE Sec. 24-12-8
Sylvan 3,999 ft.; drlg. 4,015 ft.

OKLAHOMA COUNTY

W. H. Atkinson et al's No. 1 Reed, NE cor. Sec. 4-12-3w.
Rigging up.

Anderson & Kerr et al's No. 1 Linn, SW NW Sec. 17-14-2w.
Location.

R. Carl Larkin's No. 1 Brobine, NW NW NE Sec. 33-13-5w.
Rig and pits.

J. C. Shaffer et al's No. 1 Bullard, SW cor. Sec. 13-13-2w; (Wilcox test).
Wilcox 6,525 ft.; T.D. 6,542 ft.; dry and abd.

OSAGE COUNTY

Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-6.
S.D. at 3,134 ft.

(Continued on Next Page)

of oil in 48 hours from Wilcox sand at 4,592-96 feet, total depth. Rig was being built for No. 2, C W half SE SW of the same section.

Amerada Petroleum Corp. and others' No. 1 Jaynes, NW NW SW Section 20-10-10, a wildcat test in the Wetumka District, had Wapanucka lime at 3,167-70 feet and was drilling at 3,229 feet. It had no showings in the Wapanucka, but was a 30,000,000-foot gasser in Gilcrease sand. It is a Wilcox sand test.

Carter Oil Co. and others' No. 2 Community I.T.I.O. No. 1, C E half NW NW Section 11-9-6, Seminole County, was completed. It was acidized in Hunton lime at 4,002-51 feet and flowed 445 bbls. in 24 hours.

Olympic Oil Co.'s No. 1 Dixon, NE SW NW Section 12-9-8, Seminole County, had Wilcox sand at 4,277-79 feet, total depth, with only a small showing of oil and water.

Vivian Oil Co.'s No. 1 King, SW SE NE Section 29-8-4, Pottawatomie County, found Hunton lime at 4,335-60 feet and was drilled to 4,545 feet. It bailed 1 bbl. of water per hour. The well will be plugged back.

Dingee and others completed a small producer in No. 1 Risenhover, SE NW NE Section 14-7-4, in the St. Louis District. It pumped 10 bbls. in 24 hours at a total depth of 4,145 feet. Top of the Simpson lay at 4,119 feet.

In the Fish Pool, Champlin Refining Co.'s No. 5, NW SE SE Section 30-7-8 flowed 480 bbls. in 24 hours and was completed. It produces from Cromwell sand at 3,034-41 feet.

Magnolia Petroleum Co.'s No. 5 Reed, NW SE SE Section 30-7-8 was completed in Cromwell sand at 3,092-94 feet, total depth. It flowed 276 bbls. in 24 hours.

Mid-Continent Petroleum Corp.'s No. 2 Schroeder, NW NE NE Section 6-6-5, in the lower end of the St. Louis Pool was deepened to Wilcox sand at 4,203-09 feet. It swabbed 1,355 bbls. of oil in 42 hours and was completed.

Roy J. Pierce's Gilcrease sand test No. 1-A Spillman, C SW SW Section 7-6-8 in the Sasakwa area, Seminole County, found Gilcrease at 2,808 feet and drilled to 2,894 feet. The hole filled 2,000 feet with oil.

Hailey and others abandoned the location for No. 1 Simthson, NW cor. Section 35-6-12, Hughes County.

Hugh Hodges had rig up for No. 1 School land, 340 feet north and 116 feet east of SW cor. Section 7-9-5. Amerada Petroleum Corp. made a location for No. 1 Brooks, C NW SW Section 2-8-4. Champlin Refining Co. made a location for No. 7 Sea, a twin to No. 4, 980 feet from north and 811 feet from east lines of SE quarter Section 30-7-8. Magnolia Petroleum Co. had cellar and pits dug for No. 7, Reed, SE SW SE Section 30-7-8. Winona Oil Co. and Jarvis & Holm had cellar and pits ready for No. 4 Myers, 990 feet north and 427 feet east of C Section 31-7-8. Arrow Drilling Co. and others had cellar and pits dug for No. 1 School land, 160 feet north and 160 feet west of SE cor. Section 11-16-5.

Kay County

Bay Oil Co. has made a location for No. 1 James, SE SE SW Section 14-28-3, Kay County.

Pittsburg County

Midwestern Oil Co.'s No. 1 Benedict, SW SE Section 10-7-18, was deepened from 1,869 feet to sand topped at 1,790 feet, total depth 1,920 feet and it is an 11,000,000-foot gasser.

Osage County

Completions in Osage County reported in the past week were as follows:

K. L. Wickett's No. 2, SE NE SE Section 33-21-10, sands at 260 to 314 feet, dry and abandoned.

Johnson Oil & Refining Co.'s No. 8, NW cor. SE Section 30-21-9, sand at 316-34 feet, shot with 40 quarts, 105 bls. initial production.

Comail Oil Co.'s No. 5, SE NE SW Section 32-22-8, Bartlesville sand pay at 2,292-94 feet, flowed 23 bbls. of oil and 10 bbls. of water.

Indian Territory Illuminating Oil Co.'s No. 1, NE SE SW Section 5-22-10, sand at 2,413-27 feet, acidized, produced 4 bbls. in 24 hours, abandoned.

J. R. Higgins and others' No. 15, NE SE SE Section 25-23-8, deepened from 2,057 feet to sand at 2,071-72 feet, swabbed 150 bbls. of oil and 150 bbls. of water.

Continental Oil Co. and Gypsy Oil Co.'s No. 2, NE NE SW Section 12-23-7, Siliceous lime at 2,894-2,904 feet, pumped 60 bbls. of oil and 75 bbls. of water.

Sinclair Prairie Oil Co.'s No. 4, SW NW NE Section 21-25-6, sand at 2,849-64 feet, swabbed 15 bbls. of oil and 15 bbls. of water.

Sinclair Prairie Oil Co.'s No. 5, NE NE NW Section 21-25-6, sand at 2,758-64 feet, shot with 40 quarts, 50 bbls.

New work reported included J. W. Fields' No. 1-A, NW NE SE Section 11-21-11, rig on the ground; Comail Oil Co.'s No. 6, NW SE SW Section 32-22-8, cellar; Continentail Oil Co. and Sinclair Prairie Oil Co.'s No. 9, NW cor. SE SE SE Section 5-23-9, location; Lewis Production Co.'s No. 2, NW NE SW Section 28-24-7, cellar; Skelly Oil Co.'s No. 9, NW NW SW Section 3-25-6, cellar; Champlin Refining Co.'s No. 2, SW NW NE Section 22-25-6, rig; Manahan Drilling Co. and Gypsy Oil Co.'s No. 6, SW SW NW Section 3-25-6, digging cellar.

Stephens County

Western Oil, Inc., completed a 16,000,000-foot gasser in No. 1 Stover, NW NW SW Section 16-1n-8w, Stephens County in sands at 2,358-74 feet and 2,378-96 feet.

Clark & Cowden abandoned their No. 2 Simpson, NW SW NE Section 11-1n-5w, a dry hole.

George L. Pace and others' No. 16 Walkens, SW NE SE Section 21-2s-7w was dry and abandoned at 1,737 feet.

Marshall County

R. H. Burns abandoned No. 1 Snell, NW SW SW Section 31-7s-6e, Marshall County, a hole full of water at 495 feet.

F. H. E. Oil Co. made a location for No. 3 Snell, NE NW NW NW Section 31-7s-6e, and was drilling at 235 feet in No. 4 Snell, NW SW NW NW Section 31, and made a location for No. 5 Snell, NW NE NW NW Section 31. Trio Oil Co. had a machine in for No. 1 Gilbert, SE cor. Section 25-8s-7e.

Carter County

Smith & McDornin, using an ordinary water well drilling outfit completed two 2-bl. wells on the Norton farm in Section 32-2s-2w, Carter County, in a sand topped at 266 feet.

Samedan Oil Co. was rigging up to start No. 5 Graham, NW SE NW Section 31-1s-2w.

Waco Turner has a rig up for No. 1 A. F. Munson, NE NW NE Section 35-5s-2w, in Carter County. Carter Oil Co.'s No. 1 Carter-Williams, SW NE SW Section 27-2s-3w was drilling at 2,865 feet.

Jefferson County

Bridwell Oil Co.'s No. 5 Wohlgemuth, C W half NW NE Section 30-6s-5w, Jefferson County, was completed, a 35-bbl. initial producer at 1,510-13 feet.

Farlyn Oil Co.'s No. 27 Seay, SW NE SE Section 3-7s-5w is a 35-bbl. completion in sand at 1,035-53 feet.

Bridwell Oil Co.'s No. 3 Seay, NW SW NW NE Section 30-6s-5w was drilling at 892 feet. Farlyn Oil Co.'s No. 28 Seay, 1,420 feet south and 1,530 feet east of C Section 3-7s-5w, was drilling at 100 feet.

Jackson County

The second well in the Altus Field to find oil is Petroleum Produce No. 1 Cole, SW SW SE Section 34-2n-20w, which swabbed 8 bbls. per hour from Granite Wash at 1,427-35 feet. Drilling was continued.

McCarty Oil Co. was building rig for No. 1 Coll, SE SE SW Section 34-2n-20w and A. H. Emenheiser spudded No. 1 Murrell, SE SW SE Section 17-3n-21w.

Fred Morgan made a location for No. 1 Corder, C SW SE Section 19-4n-22w.

Love County

Amerada Petroleum Corp. and Stanolind Oil & Gas Co.'s No. 1 Westheimer & Daube, NW SE SE Section 17-6s-2e, Love County, was drilling at 1,620 feet.

Wildcat Operations in Oklahoma

(Continued from Preceding Page)

PAYNE COUNTY

Marathon Oil Co.'s No. 1 Potts, C SW SW Sec. 27-19-2.
Top Arbuckle 5,085 ft.; T.D. 5,116 ft.; P.B. to 4,550 ft.; set 6-in. 4,489 ft.; to test Misener sand.

PITTSBURG COUNTY

McAllister Pet. Corp. et al's No. 1 Chunn, C SE NW Sec. 29-4-14.
T.D. 1,530 ft.; pipe collapsed; S.D.

P. H. Gray et al's No. 1 Lee, NW SE Sec. 12-5-12.
Drlg. 810 ft.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-6.
S.D. 2,920 ft.

C. W. James et al's No. 1 Neal, C NW SE SW Sec. 4-5-3.
8-in. csg. 3,335 ft.; bailing.

Mudge O. & G. Co.'s No. 1 Clampett, SW NW NW Sec. 10-2-6.
Sylvan 140 ft.; Viola 285-379 ft., T.D.; drlg. 379 ft.

Paramount Oil Co.'s No. 1 Graham, SW SE SW Sec. 12-1-7.
Drlg. 2,868 ft.

Gillett & Kroeger's No. 1 Robbins, NE SE Sec. 31-1-4.
Machine.

Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e.
Drlg. 1,162 ft.

H. M. Marcum's No. 1 Magnuson, SW SE SE Sec. 23-2-7.
6-in. csg. 1,752 ft.; T.D. 1,755 ft.

J. D. Sledge and Jack Lynch's No. 1-A (twin) Thompson, SW NE SW Sec. 1-1n-7e.
Bromide at 4,503 ft.; first sand at 4,585-4,605 ft.; broken sand 4,605-36 ft.; second sand at 4,647-56 ft.; hole filled 500 ft. with wtr.; P.B. to 4,560 ft.; shot with 165 qts. at 4,300-80 ft.; csg. collapsed.

Southern Oil Corp.'s No. 1 Ladd, C NW NW Sec. 27-3-7.
5-in. csg. 2,365 ft.; drlg. 2,402 ft.

Southern Oil Co.'s No. 1 Walker, NW NW SW Sec. 11-4-6.
Sand 785-816 ft.; 8,000,000 ft. of gas; S.D. 820 ft.

PUSHMATAHA COUNTY

Whitehead Drlg. Co. et al's No. 1 Messer, SE SW SW Sec. 35-2s-18e (O.W.D.D.).
8-in. 2,595 ft.; sand 2,660-80 ft.; S.D. 2,690 ft.

SEMINOLE COUNTY

Atlantic Oil Prod. Co. et al's No. 1-A Thompson (community test), SW SE SE Sec. 15-11-8.
T.D. 3,800 ft.; drill pipe stuck.

Ray Dorris and J. T. Hall's No. 1 Dorris, SE SE SW Sec. 31-10-7.
S.D. 281 ft.

Crabtree Drlg. Co.'s No. 1 Chandler, NE SE SW Sec. 4-5-6.
Spudding.

Verser & Clay et al's No. 1 Thomas, NE SE NW Sec. 1-6-6.
S.D. at 2,302 ft.

Wofford Drlg. Co. et al's No. 1 Abbott, NE cor. Sec. 33-8-7.
Drlg. 1,910 ft.

Wofford Drlg. Co. et al's No. 1 Thomas, NW SE Sec. 8-8-7
Wapanucka 2,780 ft.; T.D. 2,835 ft.; S.D.

TEXAS COUNTY (PANHANDLE)

Ben F. Ash et al's No. 1 Guymon Townsite, C NE SE Sec. 30-3n-15e; (Cimarron Meridian).
T.D. 2,420 ft.; fishing for drill pipe.

WASHITA COUNTY

Okla.-Midwestern Oil Co.'s No. 1 Dock, SW cor. Sec. 21-8-15w.
T.D. 2,420 ft.; lost tools in hole; rig rebuilt; S.D.

Anadarko Basin Oil Co.'s No. 1 Wolf, NE SW Sec. 23-9-17w.
Rigged up and S.D.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3-10.
H.F.W. 2,344 ft.; test shallow sand.

Malernee et al's No. 1 D. O. K. Land Co., C SE SE Sec. 16-2s-13.
S.D. 3,115 ft.

BRYAN COUNTY

C. B. Welch's No. 1 Collins, NE NE Sec. 19-8s-8e.
Machine.

COMANCHE COUNTY

H. W. Baker's No. 1 Miller, SE SW SE NE Sec. 22-2-13w.
Drlg. 115 ft.

Oscar Jones' No. 1-A Sheets, NE SW Sec. 26-3-10w.
Machine.

Henry Rosenthal et al's No. 1 Au-Chi-Re-Ah, NW cor. Sec. 5-1-9w.
Drlg. 240 ft.

F. F. Stevens' No. 1 Green, SE SW Sec. 2-1-13w.
Drlg. 1,280 ft.

Heiden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.
S.D. at 860 ft.

JACKSON COUNTY

Associated Oil Co.'s No. 1 Harrell, NE SW Sec. 13-1-21w.
Drlg. 150 ft.

Burk Royalty Co.'s No. 1 Gore, SE NW SE Sec. 2-1s-20w.
S.D. at 1,909 ft.

Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.

Palo Duro Oil Co.'s No. 1 Balum, SW SW SE Sec. 16-2-21w.
S.D. for repairs 345 ft.

Petroleum Prod. Co.'s No. 1 Cole, SW SE Sec. 34-2-20w.
Granite wash 1,427-35 ft.; swabbed 8 bbls. per hr.; drlg. 1,445 ft.

Selby Oil Co.'s No. 1 Holt, SE SW Sec. 15-2-20w.
Lost hole at 965 ft.; drlg. at 75 ft. in new hole.

D. Scheig's No. 1 James, NE cor. Sec. 23-1-20w.
Granite wash 1,133-38 ft.; drlg. 1,560 ft.

D. Scheig et al's No. 1 Cole, NE SE SE Sec. 5-1n-20w.
Rigging up.

Dick Scheig et al's No. 1 Cole, NE SE SE Sec. 5-1n-20w.
Drlg. 285 ft.

Whatley & Whatley's No. 1 Holt, NW SW SE Sec. 20-1n-20w.
T.D. 858 ft.; lost hole; skidded 60 ft. S.

JOHNSTON COUNTY

W. A. Delaney et al's No. 1 Diamond, NW NE SE Sec. 5-1s-8.
Drlg. 2,100 ft.

MARSHALL COUNTY

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
Drlg. 5,094 ft.

McCURTAIN COUNTY

J. V. Scrivener et al's No. 1, NE SW SW Sec. 24-6s-21.
Machine.

MURRAY COUNTY

Equitable O. & G. Co.'s No. 1 Scott, CSL N¼ NW SW Sec. 15-1s-3.
Simpson lime 797 ft.; drlg. 864 ft.

Manahan et al's No. 1 Ward, NE SE NW Sec. 18-1s-3; (Wilcox sand test).
Drlg. 550 ft.

C. P. Williams et al's No. 1 Singleterry, SE SW NW Sec. 25-2s-3e.
T.D. 743 ft.; S.D.

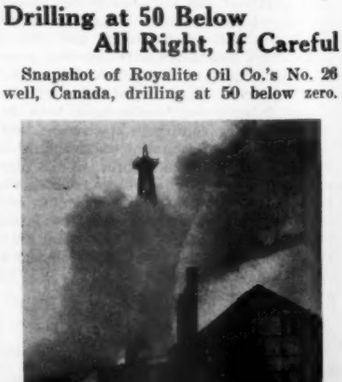
STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w.
Rig down, drill pipe in hole; T.D. 3,220 ft.

Henry Rosenthal et al's No. 1 Au-che-re-ah, NW NW NW Sec. 5-1n-9w.
Drlg. 1,402 ft.

Drilling at 50 Below All Right, If Careful

Snapshot of Royalite Oil Co.'s No. 26 well, Canada, drilling at 50 below zero.



"We experienced no trouble, except any time the crew forgot and touched a lever or piece of metal with a bare hand they received bad frost burns."

RULING ON MINERAL RIGHTS

WASHINGTON, D. C., Feb. 18.—The Securities and Exchange Commission has extended until further notice the exemption from registration under the Securities Act of 1933 of fractional undivided interests in oil, gas or other mineral rights (other than fractional undivided oil and/or gas royalty interests), commonly known as working interests in leases. Ten days' notice of the termination of this exemption will be given.

H. J. THOMPSON DIES

H. J. Thompson, assistant secretary and treasurer of the Continental Oil Co. of California and an employe of Continental for 14 years, of which 12 years were with the company in the California district, was fatally injured in an automobile accident in Los Angeles and died a short time later.

Member Petroleum Equipment Suppliers' Association

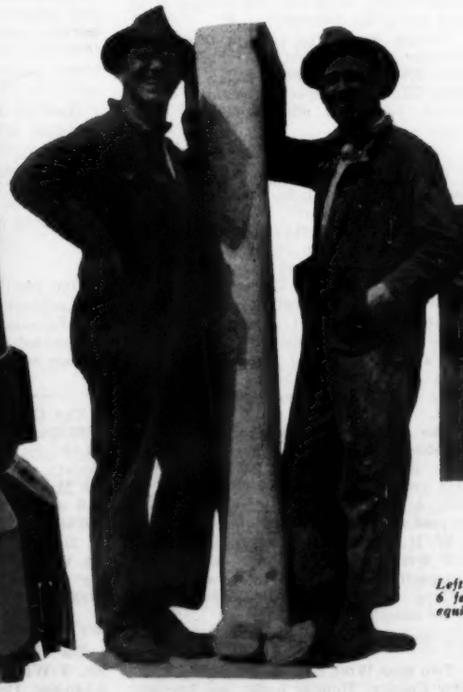
FOR CORING HARD AND SOFT FORMATIONS

DEAN CORE DRILLS

Dean Core Drills are supplied with interchangeable rock and drag type heads for coring both hard and soft formations. The patented catcher dogs which make possible such high recovery in hard digging also serve to retain the core within the barrel when operating in soft formations, as the illustrations here clearly demonstrate. The drill with either type of head will handle and bring up any core that can get into the barrel. Designed for drilling holes from 3 7/8" to 27" in diameter, with 20 ft. and 30 ft. barrels. Length of cores are practically unlimited as special barrels of any length desired can be supplied on special order.

Cores of exceptionally soft formations recovered by Dean Core Drill equipped with drag type head.

Once in the barrel, even the softest material is retained by the patented catcher dogs, which will carry practically any load safely.



Below: Another group of exceptionally soft cores recovered by the Dean Core Drill.

Left: Solid limestone core 8½" in diameter and 6 feet long recovered by the Dean Core Drill equipped with rock type head. Total core 9 feet long.

DEAN CORE BARREL MANUFACTURING SALES & SERVICE

BAKERSFIELD, CALIFORNIA, U. S. A.

Actual Average Output of Michigan Wells Now Is Within 10,000 Barrels of Their Potential

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Feb. 18.—With potential daily crude production only 10,000 bbls. more than the actual average daily output, there is more drilling activity in Michigan than at any previous period in the state's 10-year oil history.

That the search for new production to create increased reserves to offset normal decline in present pools has led Michigan operators into wide areas during recent weeks was indicated by completions and near completions of the past week.

Tests in 16 townships of nine lower Michigan counties figure in the report of drilling activities for the past week, while six comparatively new small oil and gas wells were developed in five townships of four different counties. Six townships in five counties also are represented among nine new permits issued from February 6 to February 13 by the oil and gas division of the department of conservation.

Although the most promising outlook for the discovery of new pools lies in the vicinity of proved central Michigan areas, many wildcat projects are being carried forward throughout the lower peninsula with drilling operations at a higher rate than during previous winters despite inclement weather and greater drilling difficulties.

The Porter Township Pool of Midland County maintained its position as the leading oil producing area of the state with two new wells, one good for 1,000 bbls. a day and the other with an estimated initial of 200 bbls. Another West Branch Township, Ogemaw County well was completed for 137 bbls. initial, while a new Broomfield Township, Isabella County, gasser made about 600,000 cubic feet open flow. Two dry holes, one in Mt. Haley Township, Midland County, and the other in Plainfield Township, Kent County, also were included in the week's completion record.

Six other tests, two in Porter Township, two in West Branch Township and one each in Jasper Township, Midland County, and Fremont Township, Isabella County, had been drilled into the pay sands and were being completed as the week closed, five of them as probable new commercial oil producers and one as a probable dry hole.

Daily production of four wells previously drilled into the pay sands, including two in Porter Township, one in Greendale Township of Midland County and one in West Branch Township, was increased by acid treatment.

Fifteen others in 13 different townships of eight counties were nearing completion in the Michigan Stray gas sands, the upper or lower Traverse, the Dundee, Monroe or Trenton limestones as the week closed.

Porter-Midland

Pure Oil Co.'s C No. 4 Laure E. Root, NE NE NE Section 20-13n-1w, Porter Township, Midland County, was the largest new oil well of the week making 130 bbls. in two hours for an estimated daily flow of 1,000 bbls. First show was encountered in the Dundee limestone at 3,397 feet with the big pay at 3,400 to 3,405 feet.

The Northern Drillers, Inc., brought in the No. 6 William Maywood Carter, NW SW SE Section 18, same township, for Carter Lease, Inc., as a 200-bbl. producer in the Dundee, topped at 3,391 feet and drilled to 3,417 feet.

Richard Hall's No. 3 Harris-Bond, SE NW SE Section 7, Porter Township, struck the Dundee at 3,405 feet and filled up about 2,500 feet after drilling to 3,453 feet. It will be treated with acid to increase the flow before completion.

The McHugh-Ajax Oil Co.'s No. 1 Raynor, SW NW NW Section 18, same township, also had drilled into the Dundee without flowing and was to be acid treated before production.

Two wells previously drilled into the Dundee with commercial production showed considerable increase after acid treatment. Pure Oil Co.'s B No. 3 Laura E. Root, Section 7, increased from 25 bbls. initial to 91 bbls. a day, while C. W. Teater's No. 8 J. M. Wale in Section 22 increased to 400 bbls. a day.

Three other Porter tests drilling below 3,000 feet and therefore nearing completion in the Dundee included Pure's No. 4 Harry Peak, SE SW NW Section 16 and No. 6 F. W. Howard, SW SW SE Section 17, and C. W. Teater's No. 2 Joseph M. Wale, NE NW NW Section 22.

Greendale-Midland

A small Dundee producer was increased from 15 to 50 bbls. a day when the Pure Co.'s C No. 6 Glenn M. Reem, SW NW SE Section 7-14n-2w, Greendale Township, Midland County, was treated with acid.

The McClanahan Oil Co.'s No. 1 E. J. Hamlin, SE NE SE Section 29, a Greendale Township outpost, also was drilling below 3,150 feet and expected to test the Dundee soon.

Jasper-Midland

The Pure Oil Co. was completing its No. 4 Bond-Root, C W NW SE Section 3-13n-2w, Jasper Township, Midland County, after striking a show of oil and gas in the Dundee.

Casing was being run on top of the Dundee at 3,398 feet in John F. Martin's No. 1 R. Greene, NE NE NE Section 13, also Jasper Township, a test which had been shut down for some time.

Mt. Haley-Midland

Operators were disappointed in the outcome of the Daily Crude Oil Co.'s No. 1 Joseph Martin, S50 A NW Section 28-13n-1e, Mt. Haley Township, Midland County, when it was pronounced dry in the Dundee at a total depth of 3,520 feet, or about 75 feet in. It was drilled only one location north of W. Hunter Atha's No. 1 Moran well which came in last December for 350 bbls. a day and was believed the discovery well of a new Midland County pool located three to five miles east of the Porter Pool.

The Moran well recently declined to 30 bbls. a day but was increased to 350 bbls. during the first 24 hours after acid treatment. It dropped again to 40 bbls. a day at which it was continued to produce.

W. Hunter Atha's No. 1 Beougher, C S NW SW Section 25, another test in the prospective new Mt. Haley area, was drilling below 3,100 feet and expected to be completed soon.

West Branch-Ogemaw

Two new West Branch Township, Ogemaw County, Dundee wells, one brought in last week and the other increased with acid treatment were rated at 137 and 130 bbls. a day, respectively.

W. J. Sovereign's No. 1 Golf Club, SE SW SW Section 20-22n-2e, made 137 bbls. after acid treatment topping the Dundee at 2,556 feet and completing at 2,723½ feet. The Muskegon Development Co.'s No. 1 Cora F. Barter, SW SW NW Section 28, previously credited with 20 bbls. a day was boosted to 130 bbls. by acid. Dundee was topped at 2,526 and the hole bottomed at 2,793 feet.

McClanahan Oil Co. also has drilled into the Dundee pay sands in its No. 2 O. A. Guilford, NW NE NW Section 29, West Branch Township, with a show of oil and gas indicating initial production of at least 100 bbls. although not yet completed. The hole, which was drilled 201 feet into the Dundee for a total of 2,765 feet filled up 1,500 feet with oil before treatment.

The Ide Oil & Gas Co.'s No. 1 Harry Shubert, SE NE NW Section 19, same township, also was completing with about 1,000 feet of oil in the hole in which the Dundee limestone was first encountered at 2,575 feet and drilled to 2,745 feet.

Two other Ogemaw County tests were nearing the Dundee and upper Traverse, Weber Oil Co.'s No. 1 Ann M. Schick, NW NW NE, Section 29, West Branch Township, drilling at more than 2,250 feet, and Patterson and Louis's No. 1 William P. Price, SW SW SE Section 31-22n-3e, a Churchill Township wildcat, in the upper Traverse.

A. R. Nelson has resumed drilling operations in the No. 1 Victor Nelson, NE NE SE Section 33, West Branch Township, after being shut down for many months as a non-producer in the Traverse. It now will be drilled to the Dundee as a result of recent success in the lower formation.

Only 10 of 29 uncompleted Ogemaw tests were reported active due to severe winter weather in this field located about 50 miles north of the Porter Pool. Below zero temperatures sometimes reaching the lowest point in the state have been frequent during recent weeks in this area.

Ingersoll-Midland

Howard F. Patterson's No. 1 David Haskins, NW NW SW Section 25-13n-2e, Ingersoll Township, Midland County, was still shut down but ready to case at about 3,700 feet before drilling into the Monroe formation after failure to produce in the Dundee despite a show of oil.

Isabella County

One small gas well and a disappointing wildcat test which struck water in the Dundee but was not yet completed were added to the record in Isabella County last week.

Vernon-Isabella

The Old Dutch Oil & Gas Corp.'s No. 2 Michael McGuire, C SW SW Section 36-16n-4w, Vernon Township, Isabella County, blew in with a gas flow from the Michigan stray sands not yet gauged and will be completed this week.

The Pen-Yan Investment Co.'s No. 1 A. E. Ackerman, SW NW NW Section 12, Vernon Township outpost, was nearing the Dundee drilling at more than 3,600 feet deep.

Broomfield-Isabella

The Michigan Cities Natural Gas Co.'s No. 1 William Cook, C SW SE Section 2-14n-6w, Broomfield Township, Isabella County, came in with an open flow of 600,000 cubic feet of natural gas daily from the Michigan stray sands at 1,356 feet.

Pure Oil Co.'s No. 2 Willie in Section 4, which was drilled to the Dundee formation last year as the first deep test in the Broomfield gas field, flowed 35 bbls. of high quality oil and will be treated with acid as a possible commercial producer after making only 5 to 10 bbls. a day for many months.

The Michigan Cities Co.'s No. 1 Paul R. Leuder, C NE NE Section 14, same township, which made about 500,000 cubic feet a day the week before from the Michigan Stray sands at 1,395 to 1,410 feet may be deepened.

Isabella Township

Flow of The Wittmer Co.'s No. 1 Hugh McLachlen, SE SE SE Section 11-15n-4w, Isabella Township and County, drilled into the Dundee about two weeks ago has been so disappointing it may be abandoned unless increased to commercial proportions by acid treatment. It swabbed 50 bbls. in five days after topping the Dundee at 3,658 and drilling to 3,718 feet.

Denver-Isabella

A show of gas and oil was encountered about 40 feet in the Dundee in D. W. Null, Trustee's No. 1 Prout, SW SW SW Section 7-15n-3w, Denver Township, Isabella County, which was being completed this week. Dundee was topped at 3,657 feet and at 3,703 feet it was estimated good for 10 to 15 bbls. a day.

Chartiers Oil Co. moved a rig into Section 28, Denver, for a new deep test.

Fremont-Isabella

Pure Oil Co.'s wildcat test in Fremont Township, Isabella County, which recently caused interest when it struck a show of 1,500 feet of oil in the upper Traverse before drilling into water, struck water in the Dundee at 3,606 feet last week again disappointing operators.

It is the No. 1 Lucy Baker well, SW NW SE Section 15-13n-5w, which was cased at 3,552 feet. It was being tested toward the close of the week for a show of greenish oil and gas with the possibility of deepening of the Monroe if it proves unsuccessful in the Dundee as indicated. It may be plugged back to test the Traverse sand.

Originally the Baker was to be a deep test, possibly going to the Trenton limestone. Pure Oil Co. has held thousands of acres under lease in this vicinity since 1928, so additional testing is expected before the acreage is dropped. Possibilities are seen both in the Traverse and Dundee.

Wildcat Developments

Stewart-Atha Interests struck a show of gas in the Michigan Stray sands at 1,302 feet in L. E. Duvall's No. 1 Mrs. Henry Eikenroch, NE NE NW Section 13-11n-10w, Pierson Township, Montcalm County, near Howard City and were drilling deeper as the week closed.

Lakeside Gas & Oil Syndicate's No. 1 William Dye, C NE NE Section 23-15n-8w, Martiny Township, Mecosta County, also was nearing possible completion as a gas well in the Michigan sands drilling at about 1,300 feet. Casing was set at 1,200 feet. Several other tests were active in the county but none were nearing completion.

The Talbot Oil Co. was delayed in drilling into the Trenton limestone in its wildcat on the McPherson Estate, NE NE NW Section 35-3n-4e, Howell Township, Livingston County, in which an under-reaming tool was lost causing a fishing job. Trenton was topped at 4,981 feet and the hole under-reaming at 5,012 feet as one of the deeper tests in the state. The McPherson test is being

(Continued on Page 118)

Three New Pools in Russell County Indicated by Oil Showings in Scattered Wildcat Tests

By JAMES McINTYRE

The possibility of three prolific new pools in Russell County, Kansas, was indicated in the past week by the discovery of oil in Sections 10-15-15w, 2-14-15w and 23-14-14w, in wildcat wells. One of these, when acidized in Oswald lime, started at 359 bbls. per day. The two others had good showings of oil but had not yet been tested.

Treleaven & Brimm's recently drilled discovery well in Barton County was given a potential test and produced 251 bbls. in 24 hours. It had been deepened and was producing from pay at 3,603-16 feet. It is No. 1 Haas, in Section 30-18-15w.

The Haury-Burrton Pool in Reno came through with a number of big wells, five of them averaging 2,400 bbls. per day per well.

Estimated Production

Estimated daily average production of Kansas for the week ended February 16 and for the preceding week follows:

	Barrels	
	Feb. 16	Feb. 9
Haury-Burrton	20,175	19,200
Hollow	5,250	5,375
Ritz-Canton	10,350	9,800
Voshell	5,800	5,450
Johnson	2,380	2,450
Nikkell	6,040	6,025
Sedgwick County	10,260	9,700
Ellsworth County	3,672	4,188
Barton County	1,603	1,738
Rice County	17,160	17,979
Ellis County	267	536
Kingman County	1,360	752
Stafford County	2,115	1,221
Russell County	9,568	11,575
Greenwood County	11,000	10,900
Butler County	19,000	18,925
Other pools	13,000	13,888
Total Kansas	139,000	139,700

Butler County

Rex and others completed No. 2 De Moss, 300 feet from north and 910 feet from east lines of NW quarter Section 8-28-7, Butler County, in sand at 2,650-95 feet, and have a 35-bbl. well, with considerable water.

Richmond Drilling Co.'s No. 1 Brissey, SW NE SE Section 8-27-6 acidized at 2,764-70 feet made only a 9-bbl. initial production, with a lot of water. It was completed. It was a hole full of water at 3,226 feet and was plugged back.

Kingman County

Skelly Oil Co.'s No. 6 Miles, 990 feet from north and 440 feet from east lines of SE Section 10-27-10w, in the Cunningham Pool, Kingman County, was completed in Kansas City lime at 3,445-3,520 feet. It started at 95 bbls. a day after an acid treatment.

Reno County

Shell Petroleum Corp.'s No. 1 Hoskinson A, 2,649 feet north and 1,317½ feet west of SE cor. Section 9-24-4w, a wildcat in Reno County, had Hutton lime at 3,644 feet and was coring at 3,660 feet.

Barnsdall Oil Co. completed No. 6 Sabin-C, SE cor. Section 11-23-4w, in the Haury Burrton Pool. After an acid treatment in Hunton lime at 3,610-21 feet it pumped and flowed 2,509 bbls. of oil in 24 hours. No. 7 on the same lease, SE SW SE Section 11, pumped 522 bbls. of oil in 24 hours from Hunton at 3,589-3,604 feet and was then acidized.

Sinclair Prairie Oil Co. completed No. 26 Harner, SE SE SW Section 14-23-4w, in Hunton lime at 3,593-3,611 feet. It pumped 1,194 bbls. initially without an acid treatment.

Olson Oil Co., Shell Petroleum Corp. and Continental Oil Co.'s No. 4 Blake, SW SE SW Section 23-23-4w, swabbed 150 bbls. of oil per hour for six hours, with 30 bbls. of water per hour for six hours and then flowed 85 bbls. of oil in two hours.

Barnsdall Oil Co. and Indian Territory Illuminating Oil No. 4 Baughman, C SW SE NE Section 34-23-4w, was acidized at 3,586-93 feet and pumped and flowed 3,334 bbls. in 24 hours. It had flowed 1,380 bbls. naturally. The well was completed.

Olson Oil Co. and Sinclair Prairie Oil Co.'s No. 4 Adkins, NW NW SW Section 35-23-4w in the South end of the field had Hunton lime at 3,585-96 feet and a showing of oil and water. It had not been tested.

Barnsdall Oil Co. had rig up for No. 10 Sabin-C, NE SE SE Section 11-23-4w, and for No. 11 Sabin-C, SE NE SE Section 11-23-4w. Locations were made for Sinclair Prairie Oil Co.'s No. 3 Harner, SE NE SW Section 14-23-4w, and No. 4 Harner, NE SE SW Section 14. Locations were made for Olson Oil Co. and Shell Petroleum Corp.'s No. 7 Duckworth, SW NW NE Section 34-23-4w; Barnsdall Oil Co. and Indian Territory Illuminating Oil Co.'s No. 2 Baughman, SE SW NE Section 34; Deal Oil & Gas Co.'s No. 4 McElwaine, SW NE SE Section 34, and Olson Oil Co. and Shell Petroleum Corp. No. 3 England, SE NW SE Section 34.

Harvey County

In the Hollow Pool in Harvey County, Shell Petroleum Corp.'s No. 7 Voth NW SW NW Section 4-22-3w was acidized in Hunton lime at 3,495-3,510 feet and pumped 401 bbls. in 13 hours. It had swabbed 320 bbls. in 12 hours before being acidized.

Shell Petroleum Corp.'s No. 3 Schmidt, CNL NW SW SW Section 17-22-3w, deepened from 3,208 feet to Hunton lime at 3,449-74 feet was acidized, and pumped 396 bbls. of oil in 24 hours.

Marathon Oil Co. is deepening No. 7 Dierkis, NE NE NE Section 19-22-3w, from 3,467 feet and topped Viola lime at 3,547 feet and was drilling ahead.

Marion County

Harwood Oil Co.'s No. 4 Cowman, SE NE SW Section 11-17-4, Marion County topped chat at 2,330 feet and drilled to 2,381 feet. The well pumped 345 bbls. of oil in 24 hours.

Russell County

Wolf Creek Oil Co. and others, wildcat test, No. 1 Donovan, opened a new oil producing spot in SW SW SE Section 10-15-15w, Russell County. It had Oswald pay at 3,195-3,200 feet, total depth and the hole filled 700 feet with oil in three hours. It had not been tested.

Hartman & Blair opened another oil area with their No. 1 Sullivan, NE NE SE, Section 2-14-15w, was a hole full of oil at 3,060-68 feet.

Hartman & Blair's No. 1 Gurney, a wildcat in SE SE NW Section 23-14-14w was acidized in Oswald lime at 3,001-06 feet and pumped a potential production of 359 bbls. of oil and was completed.

Aylward and others No. 1 Scheck, Lot 2, Block 3, Brooks Addition, 1,700 feet from West and 440 feet from North lines of SW Section 27-13-14w, city of Russell, had Siliceous lime at 3,272 feet, set 5-inch liner at 3,276 feet and drilled to 3,291 feet. It was estimated making 10 bbls. per hour.

Texas Co.' completed No. 5 Jacobs, NE NW SW Section 31-12-15w. It pumped 142 bbls. of oil in 24 hours from Oswald lime at 3,988-3,060 feet.

New work includes Empire Oil & Refining Co.'s No. 2 Ehrlich, SE NE SE Section 28-13-14w, cellar; Aylward and others No. 2 Mills, SE NE SE Section 28-13-14w, location.

Stafford County

Lario Oil & Gas Co. has made a location for a wildcat in Stafford County, No. 1 Tudormorgan SE SE NW Section 23-24-13w.

Ellsworth County

Locations have been made for Lario Oil & Gas Co. and others No. 1 Central National Bank, SE SE NW Section 33-15-8w, and same company's No. 1 Wright, SW SW NW Section 17-16-8w, both in Ellsworth County. Twin Drilling Co. was building rig for No. 3 Rolfs, NE NW SW Section 13-17-9w.

Ness County

Phillips Petroleum Co. has cellar dug for No. 1 Young, C NW SW Section 13-18-21w, Ness County.

Rooks County

Phillips Petroleum Co. has cellar dug for No. 1 Ordway, C NE SW Section 6-9-17w, Rooks County.

Rice County

Shell Petroleum Corp.'s No. 3 Ploog, 1,320 feet from South and 3,440 feet from East lines of SW quarter Section 33-18-9w, Ploog Pool, had Siliceous lime at 3,216-21 feet. It swabbed 255 bbls. in five hours. It extended the pool a quarter of a mile southeast.

Yingling and others' wildcat test No. 1 Maupin, NW SW SW Section 1-18-8w was a hole full of water from Siliceous lime at 3,348-34 feet and was abandoned.

Continental Oil Co. and others' No. 1-A Lansing, NE NE SW Section 25-18-8w, had Siliceous lime at 3,169-3,234 feet, and pumped 15 bbls. of oil per hour. It was acidized and has not been tested.

Roy Ramsey completed No. 2 Hilton, SE NE SW Section 6-20-9 in Siliceous lime at 3,293-3,305 feet and it made 233 bbls. of oil in 24 hours after being acidized.

Phillips Petroleum Co.'s No. 3 Link, SE NW SW Section 21-19-9w was completed. It pumped 775 bbls. of oil in 24 hours from Siliceous lime at 3,201-20 feet.

Gypsy Oil Co.'s No. 1 Callis, NW cor. Section 28-19-9w, had Siliceous lime at 3,238-44 feet and the hole filled 500 feet with oil in 12 hours.

The Texas Co.'s No. 4 Grove, SW NE NE Section 28-19-9w, produced 1,141 bbls. in 24 hours on the pump from Siliceous lime at 3,198-3,203 feet and was completed. It had not been acidized.

Only two first reports were recorded in Rice County, Keith and others' No. 2 Volkland, NE NE SE Section 20-19-9w, cellar; and Ramsey's No. 4 Ira, NE NW NW Section 32-19-9w, rig building.

Barton County

Stanolind Oil & Gas Co.'s No. 1 Herter, C SE NW Section 9-20-11, Barton County, was acidized in Siliceous lime at 3,308-42 feet and produced 16 bbls. of oil and 2 bbls. of water in 24 hours. It was completed.

Treleaven & Brimm and others' wildcat test No. 1 Haas, SW cor. Section 30-18-15w, was deepened 2 feet and flowed 251 bbls. of oil in 24 hours from pay at 3,603-16 feet.

Atlantic Oil Producing Co.'s No. 1 Helfrish, 550 feet north and 660 feet east of center Section 36-18-11w has been temporarily abandoned. It had been drilled to 3,313 feet and plugged back and shot at 3,294-3,304 feet producing 3 bbls. of oil and water, per hour.

McMorrow & Spencer were moving in material for No. 1 Hagen, NE NE NE Section 33-20-11w.

McPherson County

Shell Petroleum Corp.'s No. 3 Koehn, NE SW NE Section 16-21-3w, McPherson County, was shot in Wilcox sand at 3,386-3,410 feet and swabbed 50 bbls. of oil in 12 hours.

W. M. McNabb and Shell Petroleum Corp.'s No. 2 Neufeldt, 330 feet north and 641 feet west of center Section 21-21-3w, made 103 bbls. in 12 hours following a shot in Wilcox sand at 3,406-20 feet.

Continental Oil Co. and others completed No. 1 Graber, SW SW SE Section 29-21-1w, in the Graber Pool. It pumped 430 bbls. of oil in 24 hours after Hunton lime at 3,295-3,331 feet had been acidized.

Shell Petroleum Corp.'s No. 6 Johnson, C SW Section 35-19-3w, Johnson Pool, had chat at 3,970 feet, set 7-inch casing at 2,974 feet and drilled to 3,050 feet. The well swabbed 120 bbls. of oil in 24 hours.

Shell Petroleum Corp.'s No. 5 Griffin, 330 feet from north and 1,025 feet from west lines of SE quarter Section 11-19-2w pumped 20 bbls. of oil and 275 bbls. of water from Cilos lime at 3,554-61 feet.

(Continued on Page 100)

Wildcat Operations in Kansas

Week Ended February 16

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Sam Jarvis et al's No. 1 Morrisse, C SE NE Sec. 33-30-10w.
Rig.

Southern Drlg. Co. et al's No. 1 Davis, 330 ft. from W and 330 ft. from S lines of NE Sec 13-34-15w.
S.D. 2,865 ft.

BARTON COUNTY

D. I. Hall et al's No. 1 Arnold, SE SE SW Sec. 19-18-15w.
Rig.

C. L. Price et al's No. 1 Ehrlich, NW SE Sec. 10-16-13w.
T.D. 340 ft.; fishing.

Suppes & Witt's No. 1 Hayes, SW cor. Sec. 6-16-15w.
Location.

Treleaven & Brimm et al's No. 1 Haas, SW cor. Sec. 30-18-15w.
6-in. 3,405 ft.; Reagan sand 3,585 ft.; pay 3,603-06 ft.; T.D. 3,612 ft.; flowed by heads 251 bbls. in 24 hrs.

BUTLER COUNTY

Gaines et al's No. 1-A McKinley, NE NE SE Sec. 19-29-4.
Acidized K.C. lime 1,890-1,950 ft.; flowed 25 bbls. oil, 25 bbls. wtr.; reacidizing.

Trees & Harwood's No. 1 Henley, SW SE NE Sec. 7-24-3.
Building rig.

CLAY COUNTY

Seidel Bros.' No. 1 Younken, C S½ SE NW Sec. 21-9-4.
5-in. liner 1,635 ft.; T.D. 1,730 ft.; C O.

COWLEY COUNTY

Tom Palmer's No. 1 Wentworth, NW NW NE Sec. 9-35-2.
Set 6-in. csg. 3,182 ft.; drlg. 3,305 ft.

A. McCoy's No. 1 Brandenburg, SW SE SE Sec. 17-34-5.
Building rig

ELK COUNTY

Lassen's No. 1 Ferguson, SE SE SW Sec. 21-30-8.
1,760,000 ft. of gas 2,956-5 8ft.; 5-in. csg. 2,160 ft.; sand 2,169-76 ft.; T.D. 2,181 ft.; acidized; pumped 60 bbls. oil.

ELLSWORTH COUNTY

Carter Oil Co. et al's No. 1 Teuber, 440 ft.

(Continued on Page 112)

May Drill Kanawha County Oriskany Test Deeper; Nine Gas Wells Completed in Eastern Field

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Feb. 18.—In Elk district, Kanawha County, West Virginia, where several tests are drilling to the Oriskany sand, S. B. Avis, trustee for Grosscup and others, failed to find production on the W. T. Copen farm. At 5,003 feet, there was a small showing of gas. The sand was drilled through to 5,033 feet, and it was a very hard fine-grained structure. The total depth is 5,043 feet and there are possibilities the test will be drilled 300 to 400 feet deeper. The location is about 2,500 feet north of the producer on the W. L. Burdette farm.

In this district, the depths of the four other tests now drilling follow: V. C. Smith and others on the island at the mouth of Coopers Creek, the Matheney, Wertz and others lease is at 4,320 feet; Clyde Oil & Gas Co. on the F. W. Shinn farm at 3,508 feet; Yoak Oil & Gas Co. on the W. T. and J. H. Goshorn farm is at 1,370 feet; Benedum & Trees on the Mary C. Wingfield farm are at 1,126 feet. In addition, Grosscup and others have part of the material on the Margaret E. Jarrett farm and on the Ramsey heirs farm. Other interests have tentatively spotted locations but are waiting for results from the tests now drilling.

In Malden district, Godfrey L. Cabot, Inc., is running 5-inch casing on the Campbells Creek Coal Co. farm on Little Rock of Campbells Creek. This test showed over 1,000,000 feet of gas in the top of the Oriskany sand at 4,803 feet along with some oil. As soon as the casing is set, the test will be drilled deeper in the sand. As this test is almost on the axis of the Chestnut Ridge anticline, which at this point has an azimuth 45 degrees northeast, and viewing the producer on the Burdette farm, it would appear that the failure on the Copen heirs farm limits drilling to a parallel through the Burdette location.

Few wells were completed in the lower Eastern fields during the week. There were no producers completed and only nine gas wells. Two tests proved dry. In Southeast Ohio there was only one report, a dry hole.

SOUTHWEST PENNSYLVANIA

There was one gas well completed in Southwest Pennsylvania during the week. In East Findley Township, Washington County, the Natural Gas Co. of West Virginia completed a test on the T. F. Ealy farm at a total depth of 2,813 feet. The top of the Fifty Foot sand was at 2,702 feet and it extended to 2,740 feet. Gas was at 2,732-35 feet, about 300,000 feet a day. The top of the Thirty Foot sand was at 2,794 feet but it was void. This well is about 3,000 feet northeast of the Sprowls No. 1.

In this township the Natural Gas Co. of West Virginia has made two additional locations, one on the T. I. Ealy farm and the other on the T. C. Noble farm. Both are in the Claysville Quadrangle and are near the town of East Findley.

In Amwell Township, Washington County, Carnegie Natural Gas Co. has reached 2,015 feet on the No. 2 M. Manon and on the R. M. Carrons farm the tools are down 2,325 feet. There was a small showing of gas in the Big Injun sand. On the L. Johns farm, Union Gasoline & Oil Corp. has rigged up to start drilling.

In Greene County, Johnson & Eddy are down 1,525 feet in a second test on the W. L. B. Roberts farm in Gilmore Township. In Richhill Township, Lewis & Co. are drilling at 400 feet on the Samuel C. Chess farm. In Morris Township the Natural Gas Co. of West Virginia is getting ready to drill deeper No. 1 on the G. B. Clutter farm about 1 mile northeast of Graysville. Carnegie Natural Gas Co. is drilling deeper No. 2 on the George W. Gordon farm in Whiteley Township and has reached 2,275 feet.

In Cecil Township, Washington County, Amon and Kaufman are down 2,100 feet in No. 2 on the Thomas Weaver farm. In North Fayette Township, Allegheny County, Smith & Co. have a rig standing on the Whitmore-Clark farm.

WEST VIRGINIA

There were no producers completed in West Virginia during the week although several are drilling in the sand. On the waters of the Hughes River in Grant district, Ritchie County, Sable Oil & Gas Co. cleaned out and shot No. 1 on the Hall heirs farm, an old gas well in the Maxon sand, and it is making about 2 bbls. of oil a day.

In Roane County, on the waters of Peniel Run in Curtis district, Reedy Oil & Gas Corp. shot the test on the Lizzie Moore farm and increased production about 5 bbls. a day. This was reported good for 15 bbls. a day, natural, in the Salt sand at a depth of 1,795 feet.

Gas Wells

There were two completions in Boone County, both in Sherman district. Pure Oil Co. completed No. 72 on the Federal Coal Co. tract in the Weir sand at a total depth of 3,056 feet good for 702,000 feet a day. On the Williams Coal Co. lease, same company's No. 261 found about 330,000 feet of gas a day in the Berea sand at a depth of 3,169 feet.

In Cabell County, Shale Gas Co. completed a test on the Bracey Beckett farm in Grant district in the Brown shale at a total depth of 3,635 feet. It is a fair well gauging about 880,000 feet a day. A short log of the well follows: No Coal; Big Lime, 1,628-1,818 feet; Big Injund sand, 1,827-1,970 feet; Berea sand, 2,425-37 feet; Brown shale, 2,870-3,626 feet, with gas showing from stratas 3,152-3,500 feet.

In McComas district, Cabell County, there were two completions. Empire State Gas Co. completed a test on the C. C. McCoy farm in the shale at a depth of 3,256 feet. It gauges about 651,000 feet a day. R. H. Adkins completed drilling the test on the F. F. Starcher farm and has a gas well in the shale at a total depth of 3,821 feet. It gauges about 94,000 feet a day.

In Calhoun County, Howard Jarvis and others completed a test on the J. S. Rogers farm in Washington district as a gas well in the Salt sand at a depth of 1,412 feet. It has 212,400 feet a day. In Lee district, M. F. Crawley completed the test on the Lester and W. B. Riggs farm in the Berea sand at a depth of 2,580 feet. It is a very light gas well, gauging about 20,500 feet a day.

In Putnam County, the Red House Homestead Administration completed a second test on the Red House Homestead in Union district as a fair gas well gauging about 864,000 feet a day. This is the second fair well in this government project of community homesteads. The depths of the sands encountered follow: Big Lime, 1,480-1,665 feet; Keener, 1,680-1,705 feet; Big Injun, 1,725-85 feet; Berea, 2,189-2,216 feet, Shale, 2,550; Gas, 2,557 feet.

Drilling in West Virginia

In Boone County, Boone County Coal Corp. has reached 1,535 feet on its own property in Washington district. In Sherman district, Pure Oil Co. is down 1,951 feet in No. 3 on the A. M. Prichard lease. Owens Illinois Glass Co. is drilling No. 23 on the Peytonia Coal Land Co. lease and has reached 860 feet.

In Cabell County, Brown Gas Co. has started drilling No. 2 on the Floyd L. Bias lease in McComas district. In the same district, Boyles and Gardner are rigging up on the Ed Owens farm. R. H. Adkins is drilling at 1,000 feet on the H. S. Fraley farm.

In Calhoun County, Godfrey L. Cabot, Inc., is drilling at 1,560 feet in No. 3 on the G. W. Truman farm, Washington district. In Lee district, F. F. McIntosh has reached 1,775 feet on the W. E. Stump farm, a test. In Sherman district, Starcher and Richards are down 2,220 feet on the Graybill heirs farm. A. Rothwell and others are fishing for the tools on the J. R. Sturms farm at 1,755 feet.

In Clay County, Benedum & Trees are building a rig on the L. E. Rogers farm in Otter district. In Pleasant district, F. F. McIntosh has a location for a second test on the Peabody Coal Co. lease.

In Kanawha County, at the mouth of Huffman Branch of Falling Rock Creek in Big Sandy district, J. B. Weir has started No. 108 on the Falling Rock Cannel Coal Co. lease. It is about 2,600 feet east of South Penn Oil Co.'s No. 10 on the W. A. McCorkle farm. In Cabin Creek district, Godfrey L. Cabot, Inc., is drilling at 1,140 feet in No. 51 on the A. D. Huntington lease and 1,657 feet in No. 52.

In Logan County, West Virginia Gas Co. is down 1,200 feet on the Dingess Run Coal Co. lease in Logan district. In Marshall County, McIntire and others are drilling on the J. W. Henry heirs farm in Franklin district and are down 1,362 feet. The Pittsburgh Coal was at 816 feet.

In Raleigh County, Godfrey L. Cabot, Inc., is drilling two wells, both in Slab Fork district. No. 6 on the Beaver Coal Co. property is 2,047 feet and No. 7 is down 1,530 feet.

In Ritchie County, on the waters of Devil Hole Creek, Grant district, Devil Hole Oil Co. has rigged up for No. 2 on the Rutherford heirs farm. In this district, Russell Morris and others are down 1,000 feet on the A. C. Scaddon farm. In Murphy district, C. S. Morris has a location on the H. B. Ayers farm. W. R. Hays has the rig and materials ready for No. 4 on the Levi Wilson farm. C. S. Morris has started drilling on the W. E. Cox farm. Samuel Summers and others reached 800 feet on the Ada Jones heirs farm, a test, and shut down. Patton & Wilson Farm Oil Co. is ready to start No. 7 on its own lease. In Clay district, Gainer and others are down 1,200 feet on the Fred Lambert farm. Ralph Roberts and others are drilling at 1,400 feet on the Hayhurst and McGinnis lease.

In Tyler County, Smith and Kerns are drilling on the Ira T. Hill farm in Meade district and have reached 500 feet. In Ellsworth district, Cease Baker and others have rigged up on the Armstrong Smith farm.

In Roane County, United Fuel Gas Co. is down 1,730 feet on the Samuel Hensely farm in Geary district. In Spencer district, George E. Smith is drilling at 2,030 feet on the L. A. Short farm, No. 2. K. M. Hunt and others are down 420 feet on the T. J. Murray farm in Curtis district. Harley Satterfield is down 1,775 feet on the Mary C. and J. P. Martin farm, same district. In Smithfield district, Jackson and Bowers are building a rig on the J. A. and Amy Sarver heirs farm. Spencer Natural Gas Co. is drilling at 1,650 feet on the R. B. Young farm.

In Wirt County, J. B. and W. H. Busch are down 1,870 feet on the J. M. Wilson heirs farm. Glenn Roberts has reached 100 feet starting No. 2 on the N. T. McConaughey farm. Mason and others are down 1,960 feet on the D. C. Woods farm. All are in Burning Springs district.

Eleven Completions in the Central West; Fourteen in Indiana; 4 in Kentucky

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Feb. 18.—In the Tiffin Field, Seneca County, Ray C. Jones' test on the Henry King farm, Section 31, Liberty Township, produced 5 bbls. initial at 1,389 feet. Mr. Jones is a Cleveland operator and several years ago drilled a number of tests in the Tiffin area and has recently secured leases on 10 farms of more than 1,000 acres, in Jackson and Liberty Townships, and will also do some test work in the new oil and gas field near Upper Sandusky. In Hopewell Township, same county, Tiffin Independent Gas Co. is drilling No. 2 A. Shumaker farm, Section 5, and J. L. Barrett is drilling No. 1 A. Shumaker farm, Section 5, same township. R. E. Greene is drilling No. 3 on the T. C. and B. G. Schaull farm, Section 31, Liberty Township.

In Auglaize County, Wayne Jones is drilling No. 2 A. and M. Rohrbach farm, Section 2, Salem Township. N. E. Masters is drilling on the J. W. Wisner farm, Section 35, Hoagland Township. C. Wentzer is drilling No. 1 C. Wentzer farm, Section 28, Douchoquet Township, and N. E. Masters and others are drilling No. 1 George Ruble farm, Section 11, Noble Township.

In Allen County, Ohio Oil Co. is drilling No. 8 George W. Tabler farm, Section 9, Perry Township. H. C. Miller and others are drilling on the Arthur B. Moorman farm, Section 35, Spencer Township. In Bath Township, L. J. Pease and L. J. Pease, trustee, are drilling No. 5 Nancy E. Leedy farm, Section 14, same county.

In Shelby County, Eilerman Oil Co. is drilling No. 1 on Mrs. H. G. Fisher farm, Section 24, Cynthian Township.

In Wyandot County, Bosse Brothers are drilling on the Adam Gamber farm, Section 33, Salem Township. McPheron and others abandoned their location on the Nevin Cotterman farm, Section 15, Pitt Township. Miller and others are fishing for lost tools in Tymochtee Township, from 1,475 feet in No. 1 L. F. Bogard farm, Section 4.

CENTRAL OHIO

There were 11 wells completed in the Central Ohio Field, of which four were

(Continued on Page 104)

Drilling Activity in Los Angeles Basin and Kern County Likely to Follow Two Discoveries

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Feb. 18.—Operations in California resulted this week in two important discoveries which are likely to result in increased drilling. The Universal Consolidated Oil Co. focused the attention of operators on the Montebello Field of Los Angeles Basin by completing No. 2 Nutt, an outpost, as a commercial producer, and the Standard Oil Co. put the spotlight on Semi-Tropic in Kern County where it apparently has proved up the existence of a commercial gas field. The latter area did not require any artificial lighting effects because the Standard's wildcat took fire and furnished its own lighting. Up in the region of Delano, in Kern County, drilling operations indicated the possible existence of another substantial accumulation of natural gas and thus confirmed the initial discovery of the Trico Oil & Gas Co.

The Universal Consolidated Oil Co.'s discovery east of the Montebello Field of Los Angeles Basin is of high importance because completion of No. 2 Nutt as a commercial producer tends to indicate the existence of an entirely new field adjacent to the old Montebello Field. This new well was brought in flowing 1,250 bbls. of clean 35.9 gravity oil per day from 5,122 feet and while the production of natural gas was rather disappointing it may pick up after the well has cleaned itself out. Initially No. 2 Nutt showed only a gas production of 450,000 feet daily, but it seems to be increasing along with a substantial increase in tubing pressure and a decline in casing pressure. This well was swabbed in at midnight February 13 but did not get under way until about 7 o'clock the following morning. On the preliminary test the well was brought in barefoot and produced until the company had definitely determined that no water trouble had been encountered. The flow subsequently was killed in order that a liner might be run in and the well later recompleted.

Probable New Field

Completion of No. 2 Nutt is regarded as of primary importance because it is the second discovery in Los Angeles Basin within about four months. For several years operators have passed up Los Angeles Basin because it seemed that there was little prospect of making any further big discoveries. Charles W. Fourl upset this theory by completing a large well up on the Del Rey Palisades and in doing so substantially enlarged the productive limits of the Playa Del Rey Field. Now the Universal Consolidated comes along further to condemn the old theory.

Over in the Rosecrans Field, A. N. Macrate is drilling a deep test, scheduled for completion in the Gordon zone, and it would not be surprising if this well precipitated a deep drilling program as the prospects of finding a new deep zone appear promising.

That the Universal probably has discovered a new field or extension of the Montebello Field is evidenced by the fact that dry holes already have been drilled on three sides of No. 2 Nutt. The new productive area cannot extend west, north or south, so it must extend to the east and toward virgin territory. It may be confusing to refer to the new area as an extension of the Montebello Field and actually there is no apparent connection between the two areas except from a geographical standpoint.

The Universal's first test in this area was No. 1 Cruz, completed a year or so ago flowing 1,500 bbls. per day from a depth of 7,010 feet. Completion of this outpost precipitated a general exploration program to the north and west, but this drilling failed to extend the Cruz zone. The Universal itself drilled two additional tests and then decided the possible productive field must be located east of the area tested. The company leased 250 acres from H. T. Coffin and proceeded to drill a test with the aid of some dry hole money contributed by the Texas Co. which held several hundred acres that might participate in the play if production was found.

Semi-Tropic

The Standard Oil Co.'s No. 1 Hill, a wildcat in the Semi-Tropic district of Kern County, got away while the crew was coming out of the hole and the gas ignited. The well, which came in flowing at the rate of approximately 50,000,000 feet of dry gas per day, bridged over sufficiently enough to permit the crew to extinguish the fire with steam from the boiler plant. The blowout practically wrecked the derrick as about five stands of drill pipe went up through the crown block.

No. 1 Hill had been bottomed at 3,193 feet and a string of 13⅜-inch landed and cemented at 3,135 feet. A formation test at 3,135-93 feet, made before the premature blowout, showed 8,000,000 feet of dry gas and on this showing the company set the 13⅜-inch on top of the gas zone. No indications of oil have been found in the hole up to the present time.

The Standard's Hill well in the Semi-Tropic area is located in Section 8-27-23, about 2 miles north and a little east of Goose Lake. The Buttonwillow gas field, discovered by the Milham Exploration Co. several years ago, is about 6 miles due south of the Standard's Hill lease. This property now being prospected by the Standard once was held by the Texas Co. and lease maps indicate that the Western Gulf owns 160 acres in fee in the same section and has additional acreage in Sections 15 and 20 in the same township. Protection acreage is also held by the Union, General Petroleum, Pacific Western, Fullerton Oil Co., Amerada, Shell, Texas and others.

The gas sand found by Standard at Semi-Tropic was encountered at a high structural high and correlates fairly closely with the productive gas zone in the Buttonwillow gas field to the south. Three productive gas zones have been proved up at Buttonwillow, one being topped at 2,500 feet, another at 3,300 feet and a third at 4,200 feet. Gas in the Standard's Semi-Tropic wildcat is dry and while no analysis is yet available it will probably correspond with Buttonwillow gas, which consists of CO^2, .8 per cent; CH^4, 98.1 per cent; C^2H^4, .2 per cent and N^2, .9 per cent. Heat value averages between 980 and 1,020 B.t.u.

Playa Del Rey

The Playa Del Rey Field of Los Angeles Basin, which has got back in the limelight since completion of Charles Fourl's big well up on the Palisades last November, is destined to show a revival of drilling activity during the next several months if the Palisades' extension comes up to expectations. The potentiality of this new extension should be fairly well established within the next two or three weeks as there are several wells nearing the depth at which the top of the oil zone should be picked up. D. D. Dunlap was the first to reach the pay as he picked up the top of the oil sand in his No. 1 Del Rey at 6,408 feet and is making preparations to land the 6⅝-inch water string preliminary to making an early test. The Big Ben Oil Co.'s No. 1 Del Rey should also be completed soon.

The probable importance of this area is still undetermined due to the fact that the well log of Fourl's initial completion is rather indefinite with respect to pertinent data and consequently operators are still unable to estimate how far or extensive the productive area might be. The only information available is that this well was bottomed at 6,526 feet and has a water string landed and cemented at 6,250 feet. It would prove interesting to ascertain the depth at which the top of the oil sand was encountered and also how far this operator drilled into the schist before drilling operations were concluded.

Wells Drilling

Eight rigs have been erected up on the Palisades at the present time and most of them are standing over wells being carried down to the Fourl zone. Drilling wells in the new extension include the Big Ben's No. 1 Del Rey at 6,300 feet; D. D. Dunlap's No. 1 Palisades at 6,408 feet; Charles Fourl's No. 3 Del Rey at 6,298 feet; Mammoth Oil Co.'s No. 1 at 5,500 feet; Pacific Drilling Corp.'s No. 1 Del Rey; Trinity Oil Co.'s No. 1 Del Rey and Union's No. 7 Vidor at 6,004 feet. New rigs erected for immediate drilling include Union's No. 8 Vidor, Schirm & Taylor's No. 1, Royalty Service Corp.'s No. 1 Del Rey, and the Lor-Mar Oil & Development Co.'s No. 1 Palisades. In addition to these projects, the Ohio Oil Co. has erected a new rig for No. 16 Recreation but this project is not in close proximity to the new extension as it is located in undrilled acreage in the older sections of the field.

Mathews and Miley have taken over an old abandoned well of the Milham Exploration Co. in this area and after erecting a new rig plan to deepen it in the hope of picking up the Fourl zone. The Milham drilled this well in 1925 and abandoned it as a duster at 5,460 feet. Recent developments indicate that the well was not carried deep enough to prove conclusive and consequently this outpost in the extreme eastern end of the field may bear watching.

The Union Oil Co.'s drilling wells in the extreme eastern end of the Playa Del Rey Field are located in the lowland at the base of the Palisades as its Vidor lease extends up to this point. Heavy rains during the past few weeks have inundated much of the lowland in the eastern end of the field and drilling has been hampered. The Union Oil Co., which holds a large part of the undrilled acreage in the eastern section of the field, has found it necessary to build small islands to support the derricks for its wells due to the swampy terrain. This has not proven much of a handicap, however, as the company more than makes up for the delay after the bit gets under way. The Union has been completing new wells in the extreme eastern end of its Vidor lease, which adjoins the town lot section, in approximately one month. The depth of these wells averages about 6,100 feet. Completion of a producing well at a depth of 6,100 feet from spud to completion in approximately a month is stepping right along in any country.

Lost Hills-Belridge

The Union Oil Co. ran into another fishing job on No. 18 Belridge in the North Belridge Field of Kern County and completion will be delayed pending recovery of the drill pipe which became stuck at 8,215 feet. Up in the Delano district of Kern County, the Standard Oil Co. has picked up the Trico gas zone at 2,425 feet and has cemented a string of 8⅝-inch at this depth. The Trico Oil Co. has already finished one commercial gas producer and is at present drilling another which should be ready for an early test. In the Wheeler Ridge-Tejon area, the Reserve Oil & Gas Co. is making normal progress in a wildcat at 2,578 feet and this test may bear watching during the course of work during the next few weeks. Several fairly good showings have been logged and the next few hundred feet of hole may mean the difference between a dry hole and a discovery well in a new field.

In the Kettleman North Dome Field of San Joaquin Basin, the Standard Oil Co. has completed well No. 54-1-P, flowing 2,195 bbls. of clean 36.7 gravity oil per

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	February 3		January 27			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	.....	.....	.....	1,529,331
Diesel and gas oil	.....	.....	76,620	10,946	235,544	152,052
Gasoline	116,984	16,712	191,200	27,314	606,133	477,568
Kerosene	.....	.....	.....	.....	78,460	79,620
Foreign exports:						
Crude oil	212,567	30,367	143,671	20,524	840,830	658,677
Fuel oil	176,935	25,276	300,187	42,884	1,064,067	776,543
Diesel and gas oil	158,969	22,710	42,006	6,001	294,531	318,829
Gasoline	114,852	16,407	47,125	6,732	229,328	466,868
Kerosene	51,731	7,390	65,009	9,287	150,561	65,188
Coastwise-domestic:						
Crude oil	77,402	11,057	.....	.....	597,914	119,453
Fuel oil	126,997	18,142	109,043	15,578	1,204,846	1,064,666
Diesel and gas oil	47,587	6,798	4,416	631	68,635	61,444
Gasoline	48,597	6,942	4,524	646	674,111	1,144,680
Kerosene	.....	.....	10,407	1,487	23,714	7,392

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	78,075	203,549
Gasoline	.....	.....	.....	.....	.....	72,625
Kerosene	.....	.....	.....	.....	.....	80,925
Lubricants	.....	.....	4,005	572	4,005	8,310
Foreign exports:						
Crude oil	.....	.....	92,650	13,236	169,624	183,202
Fuel oil	12,942	1,849	18,513	2,645	105,479	125,204
Diesel and gas oil	.....	.....	70,699	10,100	74,557	144,274
Gasoline	.....	.....	131,396	18,771	293,495	332,139
Kerosene	.....	.....	38,756	5,537	42,139	86,937
Lubricants	.....	.....	19,413	2,773	19,413	19,955
Coastwise-domestic:						
Fuel oil	.....	.....	117,824	16,832	308,708	349,313
Diesel and gas oil	.....	.....	.....	.....	10,490	36,075
Gasoline	105,314	15,045	137,484	19,626	338,235	292,539
Kerosene	.....	.....	.....	.....	.....	7,317

day from 8,555 feet. This new well has a 9⅝-inch water string landed and cemented at 7,540 feet and the 7-inch liner was perforated at 7,563-7,825 feet, 7,900-8,064 feet, 8,109-8,230 feet and at 8,288-8,545 feet.

The Continental Oil Co. is making normal progress with its wildcat in the South Dome of Kettleman Hills but it will be several months before it reaches the Temblor which has proven so productive in the North and Middle Domes. The South Dome of Kettleman Hills is the last of three normal domes to prospect. Several wells have been drilled in this section of the major Kettleman anticline but the results to date have been negative.

Edison

Two new wells were put on production in the Edison Field of Kern County during the early part of the current week and a check of development work under way indicates the probable completion of several more within the next 15 days. The new producers finished in this field were the General Petroleum's No. 2 Jed, pumping 298 bbls. of 17.4 gravity oil per day from 2,997 feet after the hole had been plugged back from 3,164 feet, and No. 1 R. R. Andrews of the A. T. Jergins Syndicate, which was brought in pumping 71 bbls. of 16.8 gravity oil per day from 2,117 feet after the hole had been plugged back from 2,448 feet.

In the Mount Poso Field of Kern County, the Union Oil Co.'s No. 21 S. & M. finished last week has built up since completion and is making 1,167 bbls. per day. The Shell added a new well to its list of producers in this field when No. 6 Vedder-Rall was finished pumping 839 bbls. of 16.5 gravity oil per day from 1,929 feet. This new well was originally given a preliminary production test late in January but took a long time to clean up and consequently the official completion was delayed.

In the Round Mountain Field, the Honolulu Consolidated has listed No. 76 for completion at 1,980 feet after the hole had been plugged back from 3,554 feet. Incidentally this is the first well in the Round Mountain to drill into granite. After being plugged back to 1,980 feet this new well was brought in pumping 378 bbls. of 15.8 gravity oil cutting 15.1 per cent.

Dominguez

The Shell Oil Co. added two new producers to its list of wells in the Dominguez Field by completing Nos. 62 and 63 on the Reyes lease doing 430 bbls. and 1,344 bbls. per day respectively. The former was bottomed at 4,889 feet while the latter was finished at 4,950 feet after the hole had been plugged back from 5,090 feet. No. 63 Reyes is making 1,560,000 feet of natural gas in addition to the crude oil produced.

In the Long Beach Field of Los Angeles Basin, the R. R. Bush Oil Co. completed No. 4 fee, a new well, pumping 119 bbls. of 27.1 gravity oil per day after the well had been completed at 3,912 feet and finished with a 6⅝-inch liner carrying 205 feet of perforated.

The Southern California Drilling Co.'s No. 3 Signal, another new well, was brought in flowing 300 bbls. of 27.2 gravity oil per day by heads following completion at 3,877 feet and the landing of 286 feet of 6⅝-inch carrying 186 feet of perforated. In the Santa Fe Springs Field of Los Angeles Basin, the Union Oil Co. recompleted No. 65 Bell and this well was returned to production pumping 101 bbls. of 20.9 gravity oil per day from 4,935 feet after the hole had been completed with a 4¾-inch liner including 21 feet of perforated.

Elwood

Operators in the Elwood Field of Santa Barbara County finished two new wells this week although neither showed substantial production. Caroline Spalding's well No. 9 on permit No. 93 proved good for 781 bbls. per day upon completion at 3,681 feet, but the output was still cutting 50 per cent at last reports. This new well was finished in the Vaqueros at 3,681 feet and has a 6⅝-inch liner including 255 feet of perforated.

The Barnsdall's well No. 8-A on permit No. 88 also showed an abnormally large cut as production, 203 bbls. per day from 3,351 feet, registered a water content of about 33 per cent. The Mission Oil Co. completed its No. 1 Mesa in the Santa Barbara Mesa Field doing 141 bbls. of 19.7 gravity oil per day from 2,110 feet with the 6⅝-inch water string landed and cemented at 2,092 feet.

In the Ventura Avenue Field, the Associated Oil Co. finished No. 23 V. L. & W. doing 1,160 bbls. per day and completed No. 92 Lloyd producing 366 bbls. per day from 6,602 feet. Both of these two new wells are showing a rather high cut.

In Ventura County, the Union Oil Co. has made a deal with the Duke Oil Co. whereby the former has taken over 250 acres and agrees to drill a deep test as soon as geological data have been completed. The Duke Oil Co. retains 270 acres and will receive a monthly rental of $500 per month until such time as the Union begins actual drilling. The Union has agreed to drill a test well down to a depth of at least 5,500 feet unless commercial production is developed above that point.

Kansas Fields

(Continued from Page 97)

Dickey Petroleum Corp. and Indian Territory Illuminating Oil Co.'s No. 1 Gray, NW NW SE Section 2-20-3w, deepened from 3,060 feet to 3,067-73 feet, found a hole full of water and abandoned the well.

Shell Petroleum Corp. has rig up for No. 1 Wenger, NE NE NE Section 2-20-1w.

Greenwood County

Henderson & Holden were drilling at 460 feet in No. 1 Norton, SE NE SE Section 16-22-12, Greenwood County.

Cowley County

Wakefield and others had rig on the ground for No. 1 Newton, SE SE SE Section 21-30-2, Cowley County.

Minnehoma Oil Co.'s No. 4 Ferguson, 448 feet from north and 880 feet from west lines of SW quarter Section 3-31-8, Cowley County is a 5-bbl. completion at 1,970-2,013 feet. Western Supply & Pipe Co. and Supply Co.'s No. 2 Burford, SW SE NE Section 28-31-12, Elk County, is a 15-bbl. completion at 1,240-52 feet.

Pratt County

Atlantic Oil Producing Co. abandoned its No. 1 Prentice, a wildcat, C SE NW Section 18-28-14w, Pratt County. It had Simpson at 4,690 feet, Viola at 4,630 feet, Siliceous lime at 4,775-98 feet and salt water.

Sedgwick County

Dickey Petroleum Co. and others' No. 1 Heath, C SE NE NW Section 20-28-1e was acidized in chat at 3,115-54 feet and flowed 694 bbls. in 24 hours. It was completed.

Shell Petroleum Corp. deepened its No. 2 Fisher, SE NE SE Section 15-26-2e from 3,200 feet to Wilcox sand topped at 3,262 feet. Pay was found at 3,315-24 feet which was shot and the well swabbed 27 bbls. of oil in 2 hours.

Shell Petroleum Corp. made a location for No. 10 Lygrisse A, SE NW NE Section 15-26-2e. Dickey Oil Co. was building rig for No. 3 Brown, SW SW NE Section 20-28-1e. Rig was up for Dickey Oil Co.'s No. 6 Robbins, NW NW SE Section 20-28-1e.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
General Pet. Co., No. 12 Capitan, Santa Barbara Co.	32- 5-30	2,580	pump 117 b.d.
General Pet. Co., No. 13 Capitan, Santa Barbara Co.	32- 5-30	....	rigging up
Shell Oil Co., No. 3 Capitan, Santa Barbara Co.	32- 5-30	3,199	cleaning out
Shell Oil Co., No. 4 Capitan, Santa Barbara Co.	5- 4-30	413	sd. sh. drlg.
Fairview Oil Co., No. 1 Purisima, Santa Barbara Co.	18- 7-34	2,980	cmtd. 2,572
York-Smullin, No. 2 Lompoc, Santa Barbara Co.	33- 8-34	2,850	br. sh. drlg.
Advance Pet. Co., No. 1 Naples, Santa Barbara Co.	7- 4-29	5,665	hd. sh. drlg.
Barnsdall-Rio Grande, No. 10-88 Elwood, Santa Barbara	tideland	381	sd. sh. drlg.
East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co.	14- 4-29	3,732	suspended
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	20- 4-28	6,452	rd. sd. drlg.
Standard Oil Co., No. 2 Goleta, Santa Barbara Co.	17- 4-28	4,850	gas—shut in
Ortega Oil Co., No. 1 Summerland, Santa Barbara Co.	16- 4-26	4,583	suspended
General Pet. Co., No. 4 Rincon, Ventura Co.	tideland	....	bldg. found.
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	7,576	o. & g. show
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	....	rigging up
Texas Co., No. 128 South Mountain, Ventura Co.	4- 3-19	5,425	cmtd. 4,280
Bolsa Chica Oil Co., No. 2 Piru, Ventura Co.	4- 4-18	671	cleaning out
Dawson Oil Co., No. 1 Simi, Ventura Co.	5- 2-17	1,911	cmtd. 1,510
Continental Oil Co., No. 1 Ojai, Ventura Co.	12- 4-23	1,543	recmtd. 1,534
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	7,110	cleaning out
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	2,300	suspended
Standard Oil Co., No. 1 Lost Hills, Kern Co.	3-26-20	1,720	cmtd. 1,653
General Pet., No. 1 South Belridge, Kern Co.	30-28-21	11,377	milling
Union Oil Co., No. 18 North Belridge, Kern Co.	36-27-20	8,523	cmtd. 8,165
Standard Oil Co., No. 1-A North Belridge, Kern Co.	36-27-20	7,520	sd. sh. drlg.
Standard Oil Co., No. 2 North Belridge, Kern Co.	36-27-20	5,671	suspended
Belridge Oil Co., No. 32-35 North Belridge, Kern Co.	35-27-20	....	bldg. rig
Amerada Pet., No. 2 Blackwells Corner, Kern Co.	17-26-19	....	rigging up
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	2,464	sd. sh. drlg.
Trico Oil & Gas Co., No. 1 Alpaugh, Kern Co.	3-25-23	2,525	gas—shut in
Trico Oil & Gas Co., No. 3 Alpaugh, Kern Co.	36-24-22	2,410	sd. sh. drlg.
Signal Oil & Gas Co., No. 1 McVan, Kern Co.	10-27-27	....	grading
Buckeye Union Oil Co., No. 2 McVan, Kern Co.	10-27-27	1,351	P.B. 1,295
Golden Bear Oil Co., No. 1 Kern Front, Kern Co.	32-27-27	....	rig, suspended
Hancock Oil Co., No. 4 Mountain View, Kern Co.	14-30-28	4,451	sd. sh. drlg.
Associated Oil Co., No. 1 Mountain View, Kern Co.	2-31-29	5,501	P.B. 5,290
Star Pet. Corp., No. 1 Mountain View, Kern Co.	10-30-28	4,800	sd. sh. drlg.
Shell Oil Co., No. 1 Mountain View, Kern Co.	32-30-29	191	sd. drlg.
Union Oil Co., No. 4 Mountain View, Kern Co.	15-30-28	5,525	redrlg. 5,500
Union Oil Co., No. 5 Mountain View, Kern Co.	15-30-28	5,474	suspended
Union Oil Co., No. 6 Mountain View, Kern Co.	9-30-28	5,100	hd. sd. drlg.
Union Oil Co., No. 7 Mountain View, Kern Co.	23-30-28	5,381	sd. sh. drlg.
General Petroleum, No. 3 Mountain View, Kern Co.	14-30-28	....	rigging up
Texas Co., No. 4 Mountain View, Kern Co.	14-30-28	5,526	suspended
Texas Co., No. 5 Mountain View, Kern Co.	14-30-28	....	bldg. rig
Barnsdall, No. 3 Mountain View, Kern Co.	31-30-29	7,374	sd. sh. drlg.
Hogan Pet., No. 6 Mountain View, Kern Co.	4-31-29	4,760	suspended
Hogan Pet., No. 7 Mountain View, Kern Co.	29-30-29	448	sd. sh. drlg.
Jergins Trust, No. 5 Mountain View, Kern Co.	24-30-28	....	rigged up
Standard Oil Co., No. 5 Mountain View, Kern Co.	24-30-28	506	sd. sh. drlg.
Standard Oil Co., No. 6 Mountain View, Kern Co.	23-30-28	900	sd. sh. drlg.
Hoyt, Otis, No. 2 Mountain View, Kern Co.	24-30-28	5,755	redrlg. 2,270
Ohio Oil Co., No. 1 Mountain View, Kern Co.	33-30-29	5,561	sd. sh. drlg.
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	4,975	fish. D.P.
Gilmore-Snyder Oil Co., No. 2 Mountain View, Kern Co.	24-30-28	5,529	P.B. 5,495
Jergins Trust, No. 4 Edison, Kern Co.	23-30-29	2,117	pump 70 b.d.
Jergins Trust, No. 5 Edison, Kern Co.	23-30-29	....	rig, suspended
Consd. Crude Oil Co., No. 1 Edison, Kern Co.	17-30-29	5,297	sd. sh. drlg.
Ohio Oil Co., No. 1 Edison, Kern Co.	36-30-29	1,080	suspended
Shell Oil Co., No. 4 Edison, Kern Co.	15-30-29	3,390	o.s. drlg.
Shell Oil Co., No. 5 Edison, Kern Co.	21-30-29	2,770	sd. sh. drlg.
Shell Oil Co., No. 6 Edison, Kern Co.	14-30-29	....	bldg. rig.
Monterey Expl. Co., No. 6 Edison, Kern Co.	15-30-29	2,530	sd. sh. drlg.
Monterey Expl. Co., No. 7 Edison, Kern Co.	15-30-29	3,268	P.B. 3,170
Chaulk Oil Co., No. 1 Edison, Kern Co.	5-30-29	....	rigging up
H. & B. Oil Co., No. 1 Edison, Kern Co.	6-30-29	....	material
Texas Co., No. 1 Edison, Kern Co.	4-30-29	3,518	recmd.
Foster, Inc., No. 1 Edison, Kern Co.	8-30-29	3,576	sd. sh. drlg.
General Pet., No. 3 Edison, Kern Co.	24-30-29	....	rigging up
General Pet., No. 4 Edison, Kern Co.	14-30-29	....	rig, suspended
Surety Oil Co., No. 1 Edison, Kern Co.	32-29-29	....	rig, suspended
Petroleum Drilling Co., No. 1 Edison, Kern Co.	22-29-29	590	suspended
Signal Oil & Gas Co., No. 1 Edison, Kern Co.	31-29-30	2,200	gr. sd. drlg.
Signal Oil & Gas Co., No. 2 Edison, Kern Co.	5-30-30	....	bldg. rig.
Caravel Pet., No. 1 Sivert, Kern Co.	19-30-30	1,630	pump waer
Sea Cliff Oil Co., No. 1 Greenfield, Kern Co.	7-31-29	1,140	sd. sh. drlg.
Tejon Ridge Oil Co., No. 1 Comanche, Kern Co.	23-32-29	1,582	cleaning out
Standard Oil Co., No. 1 Semi-Tropic, Kern Co.	8-27-23	3,193	blew out
Seeple, J. C., No. 1 Elk Hills, Kern Co.	5-30-24	3,731	suspended
Richfield Oil Co., No. 2 Devil's Den, Kern Co.	14-25-18	1,700	sd. sh. drlg.
Texas Co., No. 1 Temblor, Kern Co.	29-29-21	3,710	br. sh. drlg.
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	4,384	sd. sh. drlg.
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	2-10-19	2,600	sd. sh. drlg.
Badger Oil Co., No. 1 Tejon, Kern Co.	31-11-19	6,248	redrlg. 4,400
Russ Oil Synd., No. 1 Dos Palos, Fresno Co.	28-12-11	5,110	hd. sd. drlg.
Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	suspended
K. N. D. A., No. 56 Kettleman, Kings Co.	8-22-16	10,154	redrlg. 9,571
Continental Oil Co., No. 1 Kettleman-South, Kern Co.	7-25-20	1,941	sd. sh. drlg.
Texas Co., No. 1 Coalinga, Fresno Co.	35-20-14	1,882	eocene—abd.
Farrel Pet., Well No. 1, San Luis Obispo Co.	18-31-12	1,422	hd. sh. drlg.
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,603	wet
Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings	21-22-20	2,490	gas well
Commonwealth Consd. Gas Co., No. 2 Tulare Lake, Kings	21-22-20	....	rigging up
Kettleman Pac. Oil Co., No. 1 Tulare Lake, Kings Co.	11-23-16	812	suspended
General Pet., No. 1 Devil's Den, Kings Co.	20-24-18	....	rig, suspended
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	6,993	hd. sh. drlg.
Amerada Pet., No. 1 F. L. D., San Joaquin Co.	15- 2- 5	....	material
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	8,400	hd. sd. drlg.
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24- 3	2,465	hd. sh. drlg.
Texas Co., No. 1 Petrolia, Humboldt Co.	1- 3- 2	3,220	sd. sh. drlg.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
Spelk, F. A., No. 1 Athens, Los Angeles Co.	2- 3-14	4,695	sd. sh. drlg.
Lennox Oil Fields Co., No. 1 Hawthorne, Los Angeles Co.	4- 3-14	....	material
Macrate, A. N., No. 1 Athens, Los Angeles Co.	18- 3-14	6,244	cleaning out
Hillside Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	....	grade
Wilshire Oil Co., No. 2 Potrero Deep, Los Angeles Co.	27- 2-14	8,365	wet-cut 75 p.c.
Ohio Oil Co., No. 16 Del Rey, Los Angeles Co.	28- 2-15	....	rigging up
Elliott, D. W., No. 1 Del Rey, Los Angeles Co.	27- 2-15	4,971	sd. sh. drlg.
Pacific Drlg. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	4,360	sd. sh. drlg.
Madison Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	rig, litigation
Mammoth Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	5,461	sd. sh. drlg.
Fourl, C. W., No. 3 Del Rey, Los Angeles Co.	27- 2-15	6,261	sd. sh. drlg.
Dunlap, D. D., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,251	hd. sd. drlg.
Royalty Service Corp., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	rigging up
Schirm & Thayer, No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Union Oil Co., No. 7 Del Rey, Los Angeles Co.	27- 2-15	5,971	sd. sh. drlg.
Union Oil Co., No. 8 Del Rey, Los Angeles Co.	27- 2-15	....	rigging up
Big Ben Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,213	br. sh. drlg.
Doyle Pet. Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	5,304	cleaning out
Severns Drlg. Co., No. 1 Torrance, Los Angeles Co.	24- 4-14	....	bldg. rig
Vance Dev. Co., No. 1 Artesia, Los Angeles Co.	25- 3-12	....	rigged up
Frontier Oil Co., No. 1 Whittier, Los Angeles Co.	7- 2-11	1,500	resume work
Universal Consd., No. 4 Montebello Deep, Los Angeles Co.	6- 2-11	5,122	cleaning out
Shively, N. O., No. 1 Puente Hills, Los Angeles Co.	23- 2-10	3,174	sd. sh. drlg.
Pressel & Tull, No. 1 Puente Hills, Los Angeles Co.	20- 2- 9	4,200	suspended
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	4,335	recmtd. 1,957
Barstow Oil Co., No. 1 Castaic, Los Angeles Co.	25- 5-15	3,265	suspended
Republic Pet. Co., No. 1 Newhall, Los Angeles Co.	6- 3-15	1,821	cmtd. 655
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	4,702	cmtd. 4,243
Explorers Drilling Co., No. 1 Fairview, Orange Co.	9- 6-10	945	cleaning out
Nuoli Co., No. 1 Newport, Orange Co.	29- 6-10	6,485	suspended
B. & B. Oil Co., No. 1 Newport, Orange Co.	19- 6-10	4,493	sd. sh. drlg.
C. G. Shannon, No. 1 Yorba, Orange Co.	21- 3- 9	5,777	suspended
Great American Pet. Co., No. 2 East Coyote, Orange Co.	19- 3- 9	3,272	sd. sh. drlg.
Bartholomae Oil Co., No. 2 East Coyote, Orange Co.	22- 3-10	....	rigging up
Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino	33- 2- 8	2,698	P.B. 2,381
San Diego Pet. Co., No. 1 Chula Vista, San Diego Co.	29-18- 2	6,344	suspended
Stephens, J. T., No. 1 Chula Vista, San Diego Co.	27-18- 2	209	hd. sd. drlg.
Edmonds, E. A., No. 1 Trustee, San Diego Co.	29-15- 2	2,431	hd. sd. drlg.
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co.	36- 5- 5	902	hd. sd. drlg.
Corona Oil Co., No. 1 Corona, Riverside Co.	27- 3- 7	....	rigged up

Wildcat North of Eunice May Open New Field to Southwest of Hobbs Pool in New Mexico

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Feb. 18.—The Amerada Petroleum Corp.'s No. 1-D State, a wildcat 7 miles north of the Eunice Field and southwest of the Hobbs Pool in New Mexico, which gives promise of opening a new field, showed 270 feet of oil in 25 minutes in a drill-stem test and will run casing and make a production test. Two completions and two new locations were reported in the Hobbs Pool, both locations being out from proven areas. The best completion was the Shell Petroleum Corp.'s No. 2 Sanger, an edge well on the east side, which made 6,039 bbls. and 6,600,000 feet of gas in 24 hours. The Texas Co. made one location in the Cooper Pool. One completion, three near completions and two new operations were reported in the Eunice Pool. Another wildcat in the Lea area was staked by the Texas Co., and that company's No. 1 Swearingin had 2,500 feet of sulphur water at 3,909 feet. The Repollo Oil Co. has spudded in a wildcat in the Nadine district, 6 miles south of the Hobbs Pool.

There were no completions or new operations reported in Colorado.

The Ohio Oil Co. is completing its No. 1 Hoskins in the Byron Field in Wyoming and it looks like a large well in the Tensleep at 5,214 feet. One new location was made in the Osage Field.

Two small gas wells were completed in the town of Hardin, in Montana, and a wildcat 2 miles southwest of production in the Cut Bank Field was spotted. There were no completions in Cut Bank.

NEW MEXICO

Lea County

Pipe line runs from Lea County pools in January were as follows:

Hobbs	1,018,770
Jal	117,350
Eunice	195,681
Cooper	124,916
Lea	45,053
North Lea	557
Total	1,502,327

Total runs from the Hobbs Pool from July 10, 1930, to the end of January, 1935, were 52,789,804 bbls.

Hobbs Area

Two completions and two new locations were reported in the Hobbs Pool.

The best completion was the Shell Petroleum Corp.'s No. 2 Sanger, SW SE SW Section 27-18-38, an edge well on the northeastern side of the pool, one location north and one location east of the nearest producers. It made 6,039 bbls. of oil and 6,600,000 feet of gas first 24 hours at a total depth of 4,228 feet, after being acidized twice with 2,000 and 3,000 gallons. The oil was found at 4,180-4,228 feet. The 7-inch was cemented at 4,058 feet and the 2½-inch tubing was run to 4,226 feet. The elevation is 3,643 feet.

The other completion, an inside well on the east side, was the Continental Oil Co.'s No. 2 Grimes, CSL SE SE Section 28-18-38, which gauged 3,370 bbls. of oil and 4,346 feet of gas first 24 hours from the pay at 4,180-4,220 feet. This gauge was after treating with 2,000 gallons. The 5½-inch was set at 4,015 feet and the 2½-inch tubing was run to 4,215 feet. The elevation is 3,642 feet.

Both of the new locations are outside wells which will test the northwest flank one-third of a mile out from the nearest producers and the southeastern side in the town of Hobbs. The Shell Petroleum Corp.'s No. 2-D State, C NE NW Section 24-18-37, will feel out the area on the northwest side. Cellar and pits have been completed. It is half a mile west of the Gypsy Oil Co.'s No. 2 Graham and one-third of a mile north and west of Shell's No. 1-D State. It is the same distance north and east of the Amerada-Skelly well recently completed, which proved up some additional territory in that direction. The other location is the Amerada Petroleum Corp.'s No. 1 Townsite, CWL NW SE Section 34-18-38.

Noble & Co.'s No. 3-C State, NE NW SW Section 24-18-37, is digging cellar and pits. J. P. Cusack and others' No. 1 Moon, SW cor. NE Section 28-18-38, which proves up a slight extension on the east, flowed 94 bbls. in one hour through the 2½-inch tubing after treating with 3,000 gallons of acid. It is preparing to acidize again with 3,000 gallons. Total depth is 4,200 feet. The National Securities Oil Co.'s No. 1 Linam, NE SE SW Section 33-18-37, is shut down at 4,272 feet.

Cooper Area

One new location was released in the Cooper Pool in the Texas Co.'s No. 6 Ogg, C SW SE Section 35-24-36, which is digging cellar and pits.

The Texas Co.'s No. 2 Ogg, C NW NE Section 35-24-36, which tested 1,173 bbls. and 27,000,000 feet of gas at 3,477 feet, is preparing to drill deeper. Same company's No. 3 Ogg, C SW NW Section 35-24-36, showed for 20 bbls. of oil an hour, with 2,500,000 feet of gas, on a drill-stem test at 3,459 feet, total depth, is preparing to drill deeper before completing. Same company's No. 4 Ogg, C NW NW Section 35-24-36, is drilling at 2,440 feet in salt, and its No. 5 Ogg, C NW SE Section 35-24-36, is drilling at 2,240 feet in salt.

The Stanolind Oil & Gas Co.'s No. 4-A Meyers, C NE SW Section 22-24-36, which tested 80 bbls. of fluid an hour, of which 50 per cent was water, at 3,608 feet, plugged back to 3,531 feet in an attempt to shut off bottom water and is testing. Simms Oil Co.'s No. 1 Woolworth, C SE NE Section 35-24-36, which has been fishing for drill pipe at 3,406 feet, total depth, is preparing to drill by. The Amerada Petroleum Corp.'s No. 2 Everett, C SE SW Section 26-24-36, set the 12½-inch at 419 feet with 150 sacks and is drilling at 1,665 feet in anhydrite. The Continental Oil Co.'s No. 14-A-2 Vaughn, C SE SW Section 14-24-36, cemented the 5½-inch at 3,282 feet, and its No. 15-A-1 Vaughn, C SE SE Section 15-24-36, had gas at 2,841-75 feet and is drilling in lime at 3,010 feet.

The Phillips Petroleum Co.'s No. 11 Woolworth, C SE NW Section 26-24-36, is drilling at 3,068 feet in anhydrite, and its No. 12 Woolworth, C NE SW Section 26-24-36, cemented the 9⅝-inch at 1,903 feet with 150 sacks and is drilling at 1,995 feet in anhydrite. The Humble Oil & Refining Co.'s No. 2 Coats, W NW NE Section 10-24-36, relief well for No. 1 Coats, is rigging up rotary. The Empire Gas & Fuel Co.'s No. 2 Everett, C SE SW Section 35-24-36, is rigging up rotary.

Monument Area

The Amerada Petroleum Corp.'s No. 1-D State, C NW NW Section 1-20-36, a wildcat 7 miles north of the Eunice Pool and southwest of the Hobbs Pool, looks so favorable for a discovery that it has been decided to run casing and test. At 3,898 feet, total depth, a drill stem test showed 270 feet of oil and mud in 25 minutes. Above this horizon, which approximately correlates with the producing horizon in the Hobbs Pool, it had several shows of oil and gas. It is expected that casing will be cemented and test made within the next few days. A drill-stem test at 3,210-55 feet showed 7,000,000 feet of gas in 17 minutes. Another show of gas was reported at 3,375-80 feet, and another at 3,395-3,405 feet, and a slight show of oil at 3,495-98 feet. Another test at 3,725-35 feet showed some oil and a 15-minute test at 3,685-3,712 feet showed 1,000,000 feet of gas. The elevation is 3,590 feet. The top of the anhydrite was at 960 feet, and the base of the salt at 2,255 feet. The top of the brown lime was found at 2,632 feet and the top of the Terry at 3,880 feet. These indicate that it is running around 200 feet higher than Hobbs. The nearest producers in the Hobbs Pool are about 11 miles to the northeast. It is apparently on a separate structure from the Hobbs high and was located with the seismograph and confirmed by the company's own geologists. The well is located about a mile west of the old abandoned town of Monument. The Monument townsite was sold for taxes a few months ago and the town was practically abandoned several years ago. The precinct in which it is located reported only 88 inhabitants in 1930. There is an old Indian monument in the abandoned townsite. Curiously this statue of an Indian with his hand raised to his eyes and gazing into the distance is looking directly at the derrick of the wildcat.

Eunice Area

One completion, three near completions and two new locations were reported in the Eunice area. The completion was the Skelly Oil Co.'s No. 1-C State, C NE NW Section 29-21-36, at 3,925 feet, total depth. It made 35 bbls. of oil an hour with 18,000,000 feet of gas. The pay was at 3,830-3,925. The 7-inch was set at 3,799 feet and the elevation is 3,649 feet.

A near completion is the Shell Petroleum Corp.'s No. 1-B State, C NW NW Section 29-21-36, which is testing at a total depth of 3,900 feet. In a drill stem test at 3,800-3,900 feet it showed approximately 26,000,000 feet of gas and 500 feet of oil.

Another near completion is the Tide Water Oil Co.'s No. 3 State-Foster, C NW NE Section 8-21-36, which found the pay at 3,882-3,902 feet and is testing shutoff after cementing the 7-inch at 3,767 feet with 560 sacks.

The new locations are the Continental Oil Co.'s No. 20-C-3 State, C SE NW Section 20-21-36, and the Humble Oil & Refining Co.'s No. 2-B State, C SE NW Section 29-21-36. Last named has rig up.

A third near completion is the Continental Oil Co.'s No. 30-A-1 Lockhart, C SE NE Section 30-21-36, which was drilled to 3,940 feet. It flowed 58 bbls. in 13 hours through a three-quarters inch choke on the tubing. It was then treated with 2,000 gallons of acid after which it flowed 212 bbls. It is preparing to drill deeper.

The Repollo Oil Co.'s No. 1 Adkins, NW cor. SE Section 9-21-36, set the 10-inch at 1,449 feet with 640 sacks and is drilling at 1,670 feet in salt. The Continental Oil Co.'s No. 8-A-3 Meyers, C SW SW Section 8-21-36, is drilling at 3,412 feet in lime, and its No. 18-A-1

Deep Lime Producer in South Turner Valley Increases to 100 Bbls. Crude

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Feb. 16.—Deliveries of crude oil and crude naphtha from the Turner Valley Field to the Imperial and Bell refineries in January totaled 80,734 bbls., comparing with 83,718 bbls. in December and 90,267 bbls. in January, 1934. The decline last month was partly due to severe weather conditions. January production included 6,123 bbls. of clear naphtha, 64,893 bbls. of discolored naphtha and 1,946 bbls. of light crude oil delivered to Imperial Oil Refineries, Ltd., and 7,772 bbls. to Bell Refining Co. The record month in the field was December, 1930, when more than 168,000 bbls. were produced.

Turner Valley Operations

In Section 28-18-2w5, South Turner Valley, Spooner Oils' No. 5 Anaconda, LSD 1, with a natural production of 3,000,000 feet of gas and 25 bbls. of naphtha from the Madison lime at 6,305 feet, was shot with 800 quarts, increasing the gas flow to around 15,000,000 feet. Crude naphtha recovery has increased to around 100 bbls. a day with the well still clearing itself of the fractured lime. Spooner Oils' No. 5 is the third recent deep lime producer to be shot. Northwest Co.'s No. 2 C. & E. and Mar Jon Oil Co.'s No. 2 were similarly treated and both increased production. Spooner's No. 5 has considerable light crude from the brown sand of the Dalhousie formation.

In the same section, Pacalta Oils' No. 1, LSD 7, at 5,550 feet, is blowing drilling water and gradually increasing naphtha recovery. Carleton Royalties' No. 1, LSD 2, bottoming at 6,125 feet and with a small production from the upper lime, will be shot.

Publix Oil & Gas Co.'s No. 1, LSD 8, Section 28-18-2w5, is deepening from 4,920 feet where 8⅝-inch casing was cemented in the top of the limestone. It had a heavy show of light crude in the upper horizons, and will take this production between 8 and 10-inch casing, utilizing gas lift. Renfrew Royalties' No. 1 Morris & Goodfellow, LSD 3, is at 4,410 feet and running casing. British Dominion Oil & Development Corp.'s No. 4, LSD 6, is below 5,100 feet after getting the second coal-bed marker at normal depth.

Far South Show

In Section 21-18-2w5, Union-Freehold Oil Corp.'s No. 1, LSD 8, furthest south test now active, got the Home sand at 5,010 feet and the crooked hole sands at 5,124 feet. It is below 5,163 feet in a hard formation on top of the Dalhousie sand. Considerable shows of oil and gas were met at the Home sand. Several other tests in Section 21 are shut down pending the outcome.

On the east side, Merland Oil Co.'s No. 2, LSD 13, Section 27-18-2w5, is preparing to resume from 2,875 feet after running 8⅝-inch casing.

(Continued on Page 103)

LEONARD
CONSTRUCTION CO.

37 SOUTH WABASH AVENUE

CHICAGO, ILL.

Specialists in the design, construction and operation of

CONTACT
SULPHURIC ACID
PLANTS

▲

Monsanto Vanadium Catalyst Used Exclusively

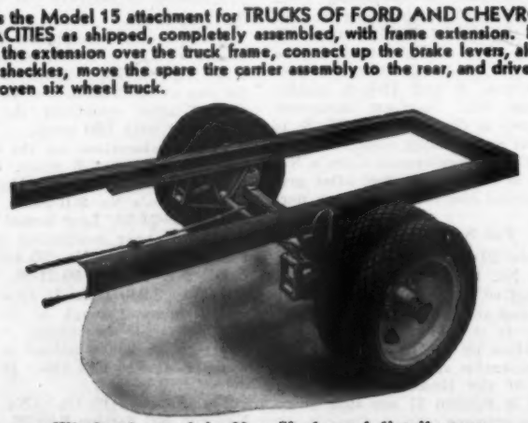
▲

CONTINUOUS RESEARCH AND CONSTANT WORLD-WIDE INVESTIGATIONS ENABLE US TO OFFER SUGGESTIONS THAT WILL BEST FIT YOUR OWN PARTICULAR REQUIREMENTS

CABLE ADDRESS: LEOCONCO, CHICAGO

UTILITY was FIRST in the UNITED STATES to INVENT, PERFECT and MARKET SIX-WHEEL ATTACHMENTS for 4 Wheel Trucks

Here is the Model 15 attachment for TRUCKS OF FORD AND CHEVROLET CAPACITIES as shipped, completely assembled, with frame extension. Ready to slip the extension over the truck frame, connect up the brake levers, also the spring shackles, move the spare tire carrier assembly to the rear, and drive away as a proven six wheel truck.



Wholesale stock in New York, and distributors throughout the U. S. Write for special folders.

UTILITY TRAILER MANUFACTURING CO

Box 1407 Arcade Annex Los Angeles, California

Meyers, C NE NE Section 18-21-36, is drilling at 3,500 feet in lime. Same company's No. 9-B-2 Meyers, C SE NW Section 9-21-36, has rig up. The Atlantic Oil Co.'s No. 1-C State, C SW SE Section 5-21-36, is drilling at 1,382 feet in salt and preparing to run the 10-inch. The Gypsy Oil Co.'s No. 1 Houston, C SE SE Section 7-21-36, is drilling at 3,400 feet in lime, and its No. 3 Bell-Ramsey, C SW SW Section 9-21-36, cemented the 7-inch at 2,810 feet with 150 sacks and is drilling at 3,520 feet in lime. The Shell Petroleum Corp.'s No. 1-A State, C SE NE Section 12-21-35, which is making a deep test to the west of production, is preparing to test at 4,372 feet, in lime.

Jal Area

Two new operations reported last week under the name of the Continental Oil Co. have been changed to Hammond, Inc. These are No. 13-B-4 Sholes, SE cor. NW Section 13-25-36, and No. 13-B-3 Sholes, NE cor. NW Section 13-25-36.

The Continental Oil Co. has a near completion in its No. 13-A-2x Sholes, NW cor. SE Section 13-25-36, which is testing at 3,325 feet, total depth. It flowed into the pits through a 1½-inch choke on the tubing, but no gauge was taken. It was making about 55 per cent water. The Repollo Oil Co.'s No. 2 Gloyd, NW cor. SE Section 12-25-36, began spudding January 28, set the 15-inch at 79 feet with 100 sacks and is waiting for rotary. The Phillips Petroleum Co.'s No. 1 Worth, C NE NE Section 3-25-36, is drilling at 2,520 feet in salt. The Continental Oil Co.'s No. 24-A-1 Sholes, C NE NE Section 24-25-36, began spudding January 30, set the 12½-inch at 127 feet with 1,000 sacks, and is waiting. The Texas Co.'s No. 1 Parker, C SW SW Section 29-26-37, is building road to location.

Lea Area

Another wildcat was spotted in the general Lea area in the Texas Co.'s No. 1 Cole, C NE NE Section 35-19-33, northwest of the Lea pool, for which cellar and pits have been completed.

The Texas Co.'s No. 1 Swearingin, C NE SW Section 8-20-34, 1½ miles north and east of the Jewett & McDonald well, an isolated producer, looks like a failure at 3,909 feet, total depth. It had 2,500 feet of sulphur water in one hour at 3,902-09 feet and is shut down for orders. R. H. Henderson and others' No. 1 Russell-Steele, C NE NW Section 24-20-33, set the 8¼-inch at 1,387 feet with 75 sacks and is drilling at 1,435 feet in anhydrite. The Argo Royalty Co.'s No. 1 Burner, SW NE NE Section 6-20-32, began spudding January 30 and is drilling at 455 feet in red beds. The Ryan Consolidated Petroleum Corp.'s No. 1 Acree, C NE NW Section 35-20-32, is drilling at 1,890 feet in salt and anhydrite. The Texas Co.'s No. 1 Moore, C NW SE Section 21-20-32, is drilling at 2,665 feet in lime.

San Simion District

The Humble Oil & Refining Co.'s No. 1 Saunders, C NE NE Section 4-22-34, is bottomed at 600 feet and underreaming the 15½-inch.

Nadine Area

Another wildcat has been spotted 6 miles south of the Hobbs Pool in the Repello Oil Co.'s No. 1 B. W. Arnold, SW NW SE Section 11-20-38. It began spudding January 28 and is running the 12½-inch to bottom at 464 feet, in the red beds.

Maljamar Area

The Maljamar Oil & Gas Co.'s No. 1 Miller, C NW SW Section 23-17-32, is building road and moving in materials.

Eddy County

The Grayburg Oil Co.'s No. 6 Burch, C SE NE Section 19-17-30, Maljamar district, is drilling at 170 feet in red beds, and the Skelly Oil Co.'s No. 1 Dow, C SW SE Section 15-17-31, is drilling plug after cementing the 8¼-inch on bottom at 3,250 feet, in lime. The Coronado Exploration Co.'s No. 1 Anderson, C NE NW Section 13-20-23, Seven Rivers district, is waiting for 8¼-inch at 325 feet in red beds. Leonard and others' No. 1 Nunlee, C NW SW Section 27-16-30, North Jackson, is drilling at 2,650 feet in lime. Tignor, Etz & Keyes' No. 1 State, C NE NW Section 15-17-28, Artesia district, is drilling at 125 feet in red beds, and Flynn, Welch & Yates' No. 71 State, C SW NE Section 10-19-28, topped the red sand at 1,605 feet and is drilling at 1,655 feet.

COLORADO

Adams County

The Riddle Petroleum Co.'s No. 1 Baxter, C SW Section 2-3s-66, Derby district, is preparing to pull tubing in water well and underream the 6⅝-inch from 760 feet to shut off water sand at 840-72 feet and deepen to the Milliken at around 1,200 feet.

Boulder County

Leslie R. Steele and others' No. 1 Maxwell, SW NE NW Section 24-1n-71, west of old Boulder Field, is underreaming the 10-inch to bottom at 160 feet.

Jefferson County

Henry Swan's No. 1 Swan, SW SW Section 25-4s-69, near Denver, which is being drilled for domestic water supply, is making hole at 1,376 feet. It was through the Arapahoe at 850 feet. It is being watched by oil men for geological data. Sidney Keoughan has the contract and it is being drilled with portable rotary.

Lincoln County

The Consolidated Smelting & Metals Co.'s No. 1 Hancock, NE cor. SW Section 7-17-52, Haswell district, is drilling at 1,050 feet with a good show of gas and a small show of oil.

Moffat County

The Stanolind Oil & Gas Co.'s No. 35-SD Parkinson, SE cor. NE Section 22-4n-92, Iles Dome, is drilling at 2,773 feet. It topped the Frontier at 2,351 feet.

Park County

The South Park Oil Co.'s No. 1 State, SE cor. SW Section 16-11-75, Hartsel district, is drilling at 1,155 feet. Unitization of acreage on the structure is in progress.

Prowers County

The Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, Lamar district, is waiting at 4,843 feet on cement after cementing off cave at 4,641-70 feet.

Annual Review

Petroleum Information, Inc., C. E. Shoenfelt, editor, has issued its annual resume of oil and gas operations in the Rocky Mountain area, covering 1934. It is an 85-page booklet giving a complete summary of oil and gas developments during the past year in New Mexico, Colorado, Wyoming, Montana and Utah, with production of fields, wells completed, status of drilling operations, lists of pipe lines, refineries and tankage, a number of maps of structures upon which wildcats were completed or being drilled, and a wide variety of other information.

WYOMING

Big Horn County

The Ohio Oil Co. has a near completion in what looks like a large well on the Byron Dome in its No. 1 Hoskins, SW cor. Section 14-56-97. It topped the Embar at 5,080 feet and the Tensleep at 5,130 feet and was still in the last named formation when drilling stopped at 5,214 feet to run the producing string to the top of the Embar. It was drilled with rotary and the hole has not been unloaded, but the cores showed good saturation. It offsets two producers in the NE cor. of Section 22 and NW cor. of Section 23.

The Wyoming Oil & Refining Co.'s No. 1 Evans, NE cor. NW Section 12-49-91, Paintrock structure, has r'g completed and is moving in tools. The California Exploration Co.'s No. 1 Government, C SW SW Section 4-54-94, Spence Dome, is

moving in equipment for test to the Madison at 1,200 feet.

Carbon County

The Ohio Oil Co.'s No. 1 Kyle, NE SE NE Section 26-21-79, Medicine Bow district, joint with the California Co., is drilling at 4,265 feet in shale, with the Sundance at 6,000 feet, as the objective. The Ohio company's No. 1 Morris, C NW SE Section 6-20-77, Diamond Dome, is drilling at 6,100 feet and is still in the red beds. The Argo Oil Co.'s No. 1 Johnson-Union Pacific, NE cor. SE Section 5-24-87, O'Brien Springs, is delayed at 3,470 feet, close to the top of the Sundance, with a fishing job. Earl W. Reeder, Inc.'s No. 1 Whitford, SW SE SE Section 24-20-84, Overland Dome, is drilling at 3,150 feet, near the horizon at 3,200 feet in No. 1 Union Pacific, one-third of a mile to the east which showed for somewhere between 200 and 600 bbls. a day in an unidentified formation.

Fremont County

The Mid-American Oil Co.'s No. 2 Government, C NE SW Section 14-28-92, Sheep Creek, is fishing at 1,640 feet.

Converse County

R. J. Dilger and others' No. 1 Government, SE NE SW Section 33-31-72, Poison Lake district, is shut down to run casing at 878 feet.

Park County

The Rocky Mountain Gas Co.'s No. 1 Oregon Basin Oil & Gas Co., C SW NW Section 32-51-100, Oregon Basin Field, is spudding and preparing to run the 12½-inch surface string at around 100 feet.

Niobrara County

The Continental Oil Co.'s No. 1 Apex-3, SW NE SW Section 34-36-65, Lance Creek, an old gas well drilling deeper from 3,406 feet, is drilling new hole at 3,445 feet, and the Ohio Oil Co.'s No. 1 Rohlf, 100 feet south of C NE SE Section 32-36-65, which will go to the Sundance, is drilling at 2,941 feet.

Weston County

Albert Jones' No. 9 Bock, C SW NE Section 21-46-63, Osage Field, a first report, is rigging up. Irene Eaton's No. 14 Government, NE SW Section 30-46-63, is running casing at 1,340 feet.

MONTANA

Glacier County

Location for a wildcat about 2 miles southwest of production in the Cut Bank Field was released by the Gardener-Smith Syndicate in its No. 1 Tweedy, Lot 1, 660 feet west of east line and 120 feet north of south line, NE NE Section 36-33-6w. There were no completions.

Askins' No. 1 Askins, Lot 24, Block 33, Section 12-33-6w, is rigging up. Fist and others' No. 1 Donen, Lot 10, Block 11, Section 12-33-6w, is drilling at 2,125 feet, and Hannah-Porter's No. 1 International Harvester, Lot 7, Block 18, Section 12-33-6w, is rigging up. Kately & Kaup's No. 1 Drumheller, Lot 1, Section 10-34-6w, is rigged and ready to spud, and Marshall and others' No. 1 Wilkins, NE SE NE Section 12-33-6w, is drilling at 2,675 feet. The Montana Power Gas Co.'s No. 1 O'Brien, C SE SE Section 31-34-5w, is drilling at 1,150 feet, and the Olive Oil Co.'s No. 3 Winkler, W NE NW Section 35-35-6w, is drilling at 320 feet. R. C. Tarrant's No. 1 Connolly, C NE SE Section 31-34-5w, is rigging up. Watson and others' No. 1 Miller, W NW NE Section 1-33-6w, cemented the 6⅝-inch on bottom at 2,879 feet with 10 sacks. It had a show of oil at this depth. Wickstrand & Walgren's No. 1 Simero, Lot 5, Block 17, Section 12-33-6w, is drilling at 2,590 feet.

Big Horn County

Two small gas wells in the town of Hardin were completed recently. Both are first reports. J. W. Goering's No. 1 Hardin, Lot 26, Section 24-1s-33, was completed for 80,000 feet of gas with a rock pressure of 135 pounds in the Frontier at 678-98 feet, and the Hardin Auto Co.'s No. 1, Lot 5, Block 11, Section 23-1s-33, was completed for 80,000 feet a day in the Frontier at 674-94 feet. The Enterprise Oil Co.'s No. 2 Lynde, SW cor. SE Section 21-6s-35, Lodge Grass Creek, recently taken over by Fred G. Huntington, of Billings, is resuming at 3,590 feet, corrected total depth, and is trying to clean out to bottom.

Fergus County

S. W. Pennock and others' No. 1 Nordheim, NW NE NE Section 6-21-18, Scharf district, which recently resumed at 347 feet after being shut down for several months, had 200,000 feet of gas with a rock pressure of 40 pounds in the Eagle sandstone at 390-420 feet and is drilling at 472 feet.

Phillips County

A new operation in the Bowdoin gas field is reported in the British-American Syndicate's No. 1 Miller, SW cor. NW Section 17-32-33, which is drilling at 100 feet.

Canadian Fields

(Continued from Page 101)

The Supreme Court of Alberta has dissolved an injunction secured some time ago to prevent the Merland Oil Co. from selling its tail gas to the absorption plant of Gas & Oil Products, Ltd.

In the Central Turner Valley Field, Bow Oils' No. 1 (formerly Illinois-Alberta's No. 1), LSD 14, Section 12-20-3w5, has finished a long fishing job, recovering diamond drill rods lost when the well blew in 10 years ago. Some wet gas was released, and the well has been closed in for a production test. Originally, with the rods in the hole, it made 107 bbls. a day on the separator, but has been off production for some years.

In North Turner Valley, Royalite Oil Co.'s No. 26, LSD 5, Section 23-20-3w5, is below 2,551 feet.

Okalta Operations

Shareholders of Okalta Oils, Ltd., held annual meeting at Calgary last week, electing the following officers: President, W. S. Herron; vice president, P. S. Woodhall; directors, L. H. Fenerty, R. W. Ward, H. K. Reed. The only drilling in 1934 was Okalta's No. 4, a test of the light crude horizons above the lime on acreage in Section 1-20-3w5, finishing a dry hole around 4,000 feet. Tentative location was made for Okalta's No. 6 in LSD 14, Section 16-18-2w5. This test, a mile or more south of the southernmost producing well, may be drilled this year if tests under way in Section 21-18-2w5 secure production.

Tests in the Foothills

On the Pekisko structure, in the foothills south of Turner Valley, Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, will likely resume early next month from 2,315 feet. Started last year, it got the Madison limestone at 1,071 feet and was shut down in that formation. Some small gas flows and traces of crude oil were met. About 900 feet of lime have still to be drilled. A number of independent companies holding acreage on the structure are helping to finance completion.

Between Pekisko Hills and the South Turner Valley Field, Canadian Royalties' No. 1 Banner, LSD 6, Section 34-17-3w5, on the Highwood-Sinclair structure, picked up the McDougall-Segur sand at 905 feet, logging approximately 2,675 feet shallower than the normal Turner Valley wells. Some gas shows were met. The outfit is making 50 feet a day.

On the Watson structure, northwest of Lundbreck, Mar Jon-Maxmont's No. 4, LSD 10, Section 20-9-2w5, is shut down at 1,335 feet.

Vermilion Gas Test

In east-central Alberta, northeast of the Wainwright Field, Tenwell Gas & Oil Co.'s No. 1 has derrick up on the R. R. Brennan farm, LSD 9, Section 36-50-7w4, and is installing machinery. Location is about a mile west of Vermilion. The company has a tentative contract with the town to supply gas. The town owns and operates its utilities and will, it is expected, handle the gas distribution as a municipal project.

Border Fields

On the Cardston structure, Southern Alberta, Franco Oils' No. 1, LSD 3, Section 5-3-25w4, is below 2,065 feet and running casing. Some gas shows were met below 1,900 feet and commercial gas production is anticipated between 2,200 and 2,300 feet.

British Columbia Test

In southeastern British Columbia, Columbia Oils' No. 1, on the Sage Creek Dome, is below 2,305 feet with diamond drill.

Okotoks Prospect

A. J. A. Bell of Victoria, B. C., is negotiating for the development of potential oil acreage in the river flats near Okotoks. Mr. Bell holds some 70 acres on a structure north and east of the Turner Valley Field. The structure is believed to be related to the High River-Aldersyde fold where Ranchmen's Gas & Oil Co.'s No. 1 has encountered what looks like a promising oil sand at 6,265 feet. Formations in this area are much more recent than those yielding production in Turner Valley. Some operators hold that the naphtha and wet gas production is derived from a reservoir of heavier crude east of Turner Valley; and the Okotoks area is regarded as a favorable point to test.

Calgary Gas Well

While the city of Calgary secures its gas supply from Turner Valley, some 35 miles southwest, there is a producing gas well in East Calgary on the Col. James Walker estate property. Drilled in 1909 to 3,414 feet, it finished with about 150,000 feet per day. For a time the gas was used for street lighting in East Calgary; but production declined to such an extent it was cut off. It is still producing sufficient gas to heat the buildings on the Walker property. Unlike the Turner Valley product, the gas in its natural state is odorless.

Dover Gasser

In the Dover Field, Kent County, Ontario, Medina Natural Gas Co.'s No. 1, Sterling lease, is shut down in the Trenton limestone at 3,025 feet after encountering a natural flow estimated 5,500,000 feet a day. It is pretty well surrounded by dry holes or small gassers, but is on a northeast and southwest line with Oil & Gas Co.'s No. 4, a large gasser drilled

EXCESSIVE WATER CUTS
hold no terrors for
FLUID PACKED PUMPS

Any fluid lost from a Fluid Packed Pump must travel a distance of about 30 feet in the annular channel—about 10/1000" thick—between the tubes, take a complete change of direction in its course, and at the same time displace the fluid packing which is acting as a buffer against slippage.

The significant statement, "No Down Time," appears on the Performance Records of Fluid Packed Pumps in all types of service in all parts of the world—some of them continuously in the hole as long as six years. They've earned their reputation for economy.

Our nearest office will gladly supply you with complete construction and operation details.

Positive Pull Type

FLUID PACKED PUMP CO.
BOX 64 • LOS NIETOS, CALIFORNIA • U.S.A.
MID-CONTINENT AND TEXAS DISTRIBUTION
FLUID PACKED PUMP CO.—MID-CONTINENT
2 S. E. 29TH ST., OKLAHOMA CITY, OKLAHOMA
Gulf Coast Headquarters: 409 Velasco St., Houston, Texas
London Office: Coventry House, South Place, London E.C. 2, England
A MODERN PUMP FOR MODERN CONDITIONS
Protected by Patents No. 1545474, 1545475, 1549175, 1621046; others pending.

several years ago. Medina's No. 1 got the Trenton limestone at 2,920 feet, a low point, and encountered a gas flow, between 50,000 and 100,000 feet, in the top of the lime. It is the largest gasser among recent Dover completions, and may be deepened. Rock pressure is around 1,000 pounds. Further south and east, W. Stubble is spudding Prairie Oil & Gas Co.'s No. 3 on the Stephens farm, Lot 2, Front Concession, Dover East Township, less than 1,000 feet north and west of Prairie's No. 1.

In the Tilbury Field, Kent County, Ladd & Ziegen's No. 2, Guy Mifflin farm, Lot 7, Concession 14. Tilbury East Township, is rigging, about 800 feet east of No. 1 gasser.

In the De Clute Field, Kent County, Union Gas Co.'s No. 27, W half Lot 140, Talbot Road, Raleigh Township, is below 1,300 feet. Gas Producers' Syndicate's No. 3, Gilbert Pardo lease, Lot 139, Talbot Road, Raleigh Township, is below 1,150 feet and getting close to the first gas.

In Lambton County, a shallow test by Cecil McCordic of Forest on the W. T. Govenlock farm, east of Forest, got a fair production. Additional drilling may be done.

In the Eden Field, W. P. Rowe's No. 3 Wilson farm, Lot 27, Concession 8, Bayham Township, Elgin County, is drilling. E. P. Rowe's No. 4 Coyle farm, Bayham Township, is spudding. Middleton-Norfolk Gas Co.'s No. 2 Vernon McDonald farm, Lot 5, Concession 3, North Talbot Road, Middleton Township, Norfolk County, is in flint below 430 feet. Midwal Oil & Gas Co.'s No. 1, Lot 2, Concession 3, same township, is shut down around 700 feet.

Central West Fields

(Continued from Page 98)

gas wells, one dry hole and six oil wells with 159 bbls. production.

In Medina County, Preston Oil Co.'s No. 1, on the B. V. Kelina farm, Lot 40, Hinckley Township, was a dry hole at 2,906 feet. Ohio Fuel Gas Co. has a location for No. 1 Semko Ostaff farm, Lot 41, Medina Township. Same company is drilling No. 1 Clyde L. Rose farm, Lot 25, Guilford Township. Kemrow Co. is drilling No. 4 Brach and Hellman farm, Lot 24, Brunswick Township. Stewart and others are drilling No. 1 Clyde Ebehart farm, Lot 10, Lake Township. Ohio Fuel Gas Co. is drilling No. 1 J. C. Treman farm, Lot 50, Granger Township, and has a location for No. 1 Glen A. McFarren farm, Lot 7, Homer Township. East Ohio Gas Co. has a location for No. 1 on the E. S. Culp farm, Lot 11, Chatham Township.

In Holmes County, Lydic Oil & Gas Co. has a rig for No. 2 on the Gladys McDowell farm, Section 26, Monroe Township.

In Cuyahoga County, J. W. Cushing is drilling No. 2 W. F. Prechtel farm, Lot 31, Olmstead Township, and Ferro Enamel Co. is drilling No. 1 on the company's Lot 308, Newburg Township.

In Guernsey County, Preston Oil Co.'s No. 1 Arie T. Tittle farm, Lot 10, Millwood Township, produced 24 bbls. initial. Frank Lyons and others have a location on the G. W. Rich & Co. farm, Lot 18, Richland Township. William Larrick and others' No. 1 Nora V. DeColier farm, Lot 19, produced 3 bbls. initial at 3,396 feet. In Willis Township, Jewell and others' No. 4 Jennie Rose farm, Lot 20, produced 10 bbls. initial. Ferguson and McCullough's No. 5 Fred Foraker farm, Lot 20, is a gas well at 1,507 feet. H. P. Muhlback & Son are drilling Nos. 7, 8 and 9 on the Thomas Stewart farm, Lot 21, same township.

In Stark County, East Ohio Gas Co.'s No. 2 Mary Esselbourne farm, Section 4, Plain Township, is a gas well at 4,519 feet. Same company is drilling No. 2 J. and C. Albright farm, Section 8, Jackson Township, and has a rig on the Peter Schembechler farm, Section 7, same township. White and Lyons are drilling No. 2 Hattie Leaman farm, Section 26, Perry Township.

In Licking County, Blue Rock Oil Co.'s No. 5 Rachael Freece farm, Section 14, Fallsburg Township, produced 68 bbls. initial at 3,020 feet.

In Fairfield County, City Natural Gas Works' No. 1 James Matheney farm, Section 34, Berne Township, is a gas well at 2,166 feet.

In Coshocton County, Preston Oil Co.'s No. 3 Carey D. Harris farm, Section 17, Perry Township, had an initial of 56 bbls. at 3,173 feet. Same company has a location for No. 1 William Frazee farm, in three-quarter section, Newcastle Township.

In Tuscarawas County, Frank Walton and others' test on the Joseph Dunlap farm, Lot 12, Rush Township, is a gas well in the Clinton lime at 5,482 feet. James Upham has a location on the Alfred C. Uhlers farm, Section 4, Fairfield Township.

In Delaware County, Chester Wise is reported drilling below 3,032 feet on the Herman D. Vance farm, Section 3, Orange Township.

In Knox County, H. E. Perkins has a rig on the R. L. Jones farm, Section 32, Howard Township. Upham Gas Co. has a rig for No. 1 John W. McNabb farm, Lot 20, Butler Township. Ohio Fuel Gas Co. has a location for No. 1 George Lepley farm, Lot 5, same township. Same company has a rig on the William Kaylor farm, Lot 9, same township, and Reno Oil & Gas Co. has a rig on No. 3 S. S. Day farm, Section 11, Jefferson Township and County.

KENTUCKY

Four completions were reported from the Kentucky Field. In Ohio County, Mecca Oil Co. and others' No. 8 J. T. Smith farm, south of Fordsville, produced 100 bbls. initial. W. E. Hupp and others' No. 1 I. L. Bellamy 16 acres, south of Fordsville, same county, produced 20 bbls. initial.

J. T. Bartlett's No. 1 C. G. Harrison 147 acres, near Aetnaville, was a gas well, and W. E. Hupp and others' No. 1 E. Clark, same area, is dry.

No completions were reported from Illinois.

INDIANA

The Indiana Field reports 14 completions, seven gas wells and seven dry holes. In Daviess County, Midwest Development Co.'s No. 2 on the Ruth Akester farm, Section 9, Harrison Township, is a gas well at a depth of 737 feet. Indiana Southwestern Gas Corp.'s No. 3 C. W. Brittam farm, was dry at 842 feet, and its No. 1 Ora Killon farm, NE NE Section 16, same township, is a gas well at 550 feet. Charles H. Parriott is drilling No. 1 Charles Honey farm, NW NW Section 21, Veale Township, same county.

In Decatur County, Westport Natural Gas Co.'s No. 3 Zack Bicourt farm, SW SE Section 32, Sand Creek Township, is a gas well at 863 feet.

In Dubois County, Ohio Oil Co.'s No. 1 Celia and Joseph Auffert farm, NW SW Section 25, Ferdinand Township, is dry at 943 feet. In Marion Township, F. L. Dameron's No. 1 A. Kluesner farm, SE NW Section 35, is dry at 694 feet and same party is drilling No. 1 M. Schneider farm, NE NW Section 36, same township.

In Lawrence County, J. F. Imbler is drilling in Section 4, Pleasant Run Township, a wildcat.

In Madison County, A. Laws is drilling on his own property, NW NW Section 1, Green Township, on Lot 623, town of Ingalls.

In Gibson County, Big Four Oil & Gas Co.'s No. 1 O. H. Redburn farm, NW NW of Militia Donation 107, was dry at 1,753 feet. George W. Porter is drilling No. 1 on the Kohlmeior heirs farm, NE NE Section 13, Barton Township. In Columbia Township, Midwest Development Corp. is drilling below 1,400 feet in E. F. and L. W. Gudgel's No. 4, NW NE Section 22. In Washington Township, G. B. Shoultz is drilling No. 2 on the Homer Davidson farm, in Donation 118. Indiana Southwestern Gas Corp. is drilling No. 1 on the George D. Decker farm, SW NE Section 12, same township.

In Jay County, William Messal is drilling on the Miller farm, SE SE Section 16, Bear Creek Township. In Wayne Township, Harry Berger's farm was given a test by N. E. Masters in the SE SW Section 26, which was dry. A. R. Smith farm was given a test by N. E. Masters, Section 28, which also was dry. In Penn Township, Amber Oil Producing Co. is drilling No. 6 on the L. W. Edmundson farm, E half NE Section 21.

In Knox County, Mead Oil Co.'s No. 1 C. E. Beard farm, NE SE Section 15, Busseron Township, is a light gas well at a total depth of 747 feet. Same company is drilling No. 1 Starner Bond farm, in Traction 11. Glengarry Oil Co. is starting No. 1 on the Archie and Wallace Evans farm, SW SE Section 11. Mead Oil Co. is drilling No. 1 N. A. Hall farm, NE NW Section 14, same township. In Jackson Township, W. A. Sage is drilling on the J. W. Emison farm, Survey 11.

In Lawrence County, J. F. Imbler is starting a test in Section 4, Pleasant Run Township.

In Madison County, A. Laws is drilling on his own property, NW NW Section 1, on Lot 623, town of Ingalls.

In Martin County, A. T. Spaulding and F. G. Fischer have a nice showing of oil at 590 feet in the Emmett D. and Emma S. Yarnell farm, in the NW SW Section 25, Perry Township.

In Perry County, Rome Oil Co. has resumed drilling in the No. 1 Henry Dutschke, NW NW Section 28, Tobin Township. Same company is drilling No. 1 on the Sarah M. Sampley farm, NW SW Section 28. In Troy Township, Hupp and French abandoned their No. 1 on the Peckepaugh farm, Section 5, at 536 feet.

In Pike County, Bruner and Abbott have plugged back on the No. 13 Shawhan heirs, SW NW Section 35, Madison Township, making it a small gas producer.

In Posey County, J. O. Angermeier and R. W. McMahan are drilling No. 1 on the Fourth National Bank farm, SE SE Section 11, Robinson Township.

In Spencer County, Chris Zoercher is drilling No. 1 William Grass farm, NW NE Section 11, Huff Township.

In Sullivan County, Dome Gas Co.'s Nos. 1 and 2 on the W. Jennings, NE NE Section 19, Curry Township, are gas wells. Same company's No. 1 M. B. Jewell farm, NW SE Section 29, was dry at 561 feet. Same company's No. 1 Ross Marts farm, SE NE Section 10, is a gas well at 320 feet.

In Vanderburg County, P. E. Tichenour's No. 1 Emma Howard farm, Section 30, Center Township, has been abandoned.

Threading machines alone can't produce the sharp, clean threads on . . .

ALLEGHENY STEEL PIPE

Controlled quality of the steel is essential. ALLEGHENY quality is a known quantity . . . from the open hearth to the shipping platform . . .

ALLEGHENY STEEL CO.
BRACKENRIDGE, PA.
Sales Offices and Warehouse Stocks in the Principal Cities
ALLEGHENY PRODUCTS: SHEETS FOR AUTOMOBILE BODIES, METALLIC FURNITURE, DEEP DRAWING-ALLEGHENY METAL-ALLEGHENY ALLOYS-ELECTRICAL SHEETS-STEEL CASTINGS-SEAMLESS TUBING-BOILER TUBES-PIPE.

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Medicinal and Technical Grades White Oils Defined

What is medicinal and technical white oil? What tests are used to distinguish them? I would appreciate it considerably if you will give a brief outline covering the manufacture of technical and medicinal white oil. Is the viscosity important for both oils?—A. S. H.

White oil is a pure mineral lubricating oil, which has been thoroughly refined. There are two principal grades, medicinal and technical, the important characteristics are that the oil is colorless and has a high viscosity. The medicinal grade must meet the specifications of the U. S. Pharmacopoeia, as listed under Petroleum Liquidum, which include: Insoluble in water and alcohol, but soluble in ether, chloroform, fixed and volatile oils and petroleum naphtha. The oil shall be tasteless, odorless and colorless. The U.S.P. requires that the oil shall pass a certain specified viscosity test and a cloud test. The requirements of the U.S.P. are met by the usual medicinal grades found on the market. The technical grade is similar to the medicinal grade but may be lower in viscosity, have some odor, taste and color. Although some consumers require the technical oils to be practically equal to the medicinal oils.

The properties of white oil are indicated in the table.

PROPERTIES OF WHITE OIL

Specific gravity	0.860–0.890
Gravity, A.P.I.	33–27
Color	30 Saybolt
Flash, °F.	330–420
Fire, °F.	380–480
Vis. Say. Univ. at 100° Sec.	80–330
Pourpoint, °F.	5°—40°
Sulphur	none
Stability	good

The heavier crude oils of the naphthenic type are well suited as a source of white oil, but any oil will serve so long as the finished oil will have a high stability.

The stock for white oil is the wax distillate. This is dewaxed, going to low temperature treatment in the diluted (naphtha) form. The dewaxed oil is distilled to remove the naphtha and reduce the oil to the desired viscosity. This operation, usually under vacuum, must be conducted so that there will be no cracking or burning, so to avoid difficulties with color, taste and odor.

The next step is the application of acid. The acid should be added very slowly. The practice is to first add a small percentage, about two, of 66° sulphuric acid, which is thoroughly intermixed for about an hour. After settling for five to six hours, the sludge is drawn off and the treatment repeated. In the same way oleum is used in place of the 66° acid. Frequently a total of 60 to 80 pounds of acid per barrel of oil are used. After the final settling, the oil is filtered through fuller's earth.

The final purification includes neutralization and washing with alkaline alcohol. This solution may contain sodium carbonate or ammonia and ethyl alcohol, although some refiners use other alcohols; a 50 per cent solution being used in several plants. After this treatment the oil is again filtered.

This is not intended to give more than the essential principles. The finished oil must be clear, colorless, free from odor and tasteless. It must remain stable when exposed to light during storage. The details of manufacture are subject to considerable variation.

The viscosity specification is not difficult to meet, since the range is approximately 80-330 at 100° F. Color, taste, and odor specifications are the most difficult to meet. When these are "off" the product must be graded as technical.

Discovery of Flame Detonation and Early Knock Investigations

Can you tell me of the first mention of knock in the literature relating to the internal combustion engine?—F. J. M.

The discovery of combustion detonation was made independently in 1881 by both Bertholet and Le Chatelier, as published Compt. rend., 93, 18 (1881), and 93, 145 (1881), respectively. They stated that a detonation wave was set up by the combustion of all gases in air. Many others made confirming observations, which are reported in the literature.

The modern treatment of the subject seems to have started in 1913, when Constam and Shlapfer reported (Zeit. Ver. Eng., 1489 (1913), that benzol did not knock in the automobile engine to the same degree as gasoline. The influence of change in compression ratio of the engine was demonstrated by Moore before 1917 (J. Soc. Chem. Ind., 36, Feb. 15, 1917). Some very interesting and valuable contributions were made by H. C. Ricardo, based on work done prior to 1921. See the Automobile Engineer, London, 11; 51, 92, 130, 169, etc. (1921).

The first contributions by Midgley and Boyd appeared in 1920 and 1922. (J. Soc. Auto. Engr., 15, 659 (1920), same 10, 7 (1922). See also Ind. Eng. Chem., 14, 589, 1922.)

Moore concluded from his investigations of the Diesel engine that the maximum useful compression ratio was a function of the spontaneous ignition temperature of the fuel. The ignition results from the heat of compression, so the kindling of the fuel must take place at the minimum favorable compression ratio. Then, in a gasoline engine the fuel should not be heated by compression to a temperature above the kindling point of the fuel. He changed the compression ratio by lengthening the connecting rod by inserting packing between the bearing.

Midgley and Boyd obtained variable compression for their experiments also by lengthening the connecting rod.

Testing Natural Gas for Gasoline Content—Charcoal Method

I would like for you to give the information, or where I might obtain it, in regards to testing natural gas with a charcoal absorber for the gasoline content.—J. B. B.

The standard method for determining the gasoline content of natural gas required that the following details shall be observed.

The sample is collected in a charcoal adsorption tube which is charged with 150 grams of activated charcoal, 40 minutes activity, which shall be heated for one hour at 150° C. previous to use. All gas measurements are to be made on inlet side of charcoal tube. The gas is to be dried by means of calcium chloride before metering if a dry or orifice meter is used, and on outlet of meter if a wet meter is used. If an orifice meter is used, proper correction for specific gravity is necessary. All gas volumes are to be corrected to 60° F. and 30 inches of mercury without correction for saturation. Rate of flow of gas through charcoal varies with the vapor content of the gas. Rate is cubic feet per hour.

The following rates should be used: When the vapor content is under 100 gallons per million, 20 cubic feet per hour; between 100 and 300 gallons, 15 cubic feet per hour; between 30 and 500 gallons, 10 cubic feet per hour; between 500 and 1,000 gallons, 5 cubic feet per hour; over 1,000 gallons, 2 cubic feet per hour.

The volume of gas passed must be such that there will be recovery of approximately 25 cc. of fluid on distillation.

The distillation operation is conducted in the following manner:

Pour 150 cc. of pure glycerin into distillation flask. Use a funnel for the purpose in order to prevent glycerin adhering to the neck of the flask; transfer the charcoal used in the test from the adsorbing tube to the flask. A cork carrying the thermometer is inserted in the neck of the flask, the thermometer bulb being located just below the side outlet of flask; the condenser box is filled with cracked ice and water. The temperature shall be maintained between 32 and 34 degrees Fahrenheit in the condenser box; the beaker or jar in which the condensate receiver is placed is filled with cracked ice and water. A low flame is lighted under the flask. During the first few moments of the distillation the burner is offset so that the flame impinges on the side of the flask just below the level of the glycerin. This materially assists in preventing foaming of the glycerin; in case the glycerin should foam to the extent of filling the flask and flowing out the side outlet, the test is lost. When foaming occurs, this contingency can be met by playing a flame cautiously around the upper part of the flask. After the danger point from foaming is passed the flame is adjusted to the center of the flask and is so regulated that the distillation consumes about 45 minutes. When the temperature reaches 350° F. the flame is cut off and the flask allowed to cool; and, after the flask has cooled enough to permit handling, disconnect from condenser inlet and flush out condenser with 20 cc. water. The volume of condensate in the receiver is read and noted.

The gallons of fluid per million cubic feet of gas may be computed conveniently according to the following formula:

$$\frac{264.2B}{A} = X \text{ gallons of fluid per million cubic feet}$$

Where A = Corrected gas volume in cubic feet which has passed through the charcoal; and

B = The volume in cubic centimeters of the condensate recovered.

the results (x) is gallons per million; the volume of liquid is measured at 32° F., and the volume of the gas is measured at 60° F. and 30 inches of mercury pressure.

There are 3,785 cc. in 1 gallon, hence 1 cc. is 0.0002642 gallon.

References—Methods of

Natural Gasoline Association of America, Tulsa, Okla.

Natural Gas Association of America, Pittsburgh, Pa.

Refinery Requirements Tending to Exceed Oil Produced

What is the present relation between the volume of oil produced and that refined? Is the refining industry drawing on stored oil for part of its requirements?—E. I. C.

The tendency has for some months been toward refining more oil than is produced each day. This is illustrated by comparing the daily averages for the week ending December 1 with the week ending November 24. The daily production of crude oil December 1 was 2,372,000 bbls.; oil run to stills was 2,214,000 bbls. The production November 24 was 2,369,100 bbls., with 2,379,000 bbls. refined.

The refineries are now operating at from 65.6 to 70.5 per cent of capacity. Additional details of refining are given in the table.

	Barrels	
	Dec. 1	Nov. 24
Crude run to stills, daily average	2,214,000	2,379,000
Per cent operated	65.6	70.5
Motor fuel stocks	40,331,000	40,206,000
Cracking charges, daily average	1,868,000	1,868,000
Gas and fuel oil stocks	113,979,000	113,262,000
Per cent operated	95.6	95.6
Cracked gasoline, daily average	474,000	479,000

NATURAL GAS DEVELOPMENTS

Trade Commission Soon to Open Gas Hearings

WASHINGTON, D. C., Feb. 18.—After six years of delving into the electric light and power end of public utilities, the Federal Trade Commission soon will turn the spotlight on the natural gas industry. Hearings are scheduled to start next month.

Considering the attention paid to natural gas in the holding company bills, indications are that whatever legislation finally evolves from the proposals will embrace that end as well as power. Committee hearings on the holding company legislation are slated to open shortly, before the trade commission gets around to natural gas. The general assumption is the present bills will undergo much change.

The commission's investigation has covered two of the most important companies in the gas field—Cities Service and Columbia Gas & Electric. But several important units remain to be examined, including some of the big western and eastern pipe lines.

The findings are expected to have special interest in view of indications of administration pressure against gas rates. Signs of such pressure were seen in the announcement of Secretary Ickes that the PWA was considering putting $50,000,000 into a pipe line from the Texas Panhandle fields to Detroit.

Compared with the extensive light and power inquiry, the natural gas investigation will be brief. The commission is expected to wind up its hearings this year and submit a final report next january.

Gas Company's Earnings Below Authorized Return

DALLAS, Tex., Feb. 18.—Net earnings of the Dallas Gas Co. during 1934 totaled $507,437, or 1 per cent below those for 1932, according to the company's annual statement, just filed with the city commission. Return on the company's investment was only 6.49 per cent, or $95,863 less than the authorized 8 per cent return.

The company received gross earnings of $2,603,387 for 1934, compared with $2,495,873 for 1933. Operating expenses, however, totaled $2,211,813 in 1934, compared with $2,022,714 in 1933, the increase more than offsetting the gain in gross earnings.

The company sold 50 per cent more gas to industrial consumers in 1934 than it did in 1933. Sales to these customers totaled 3,336,548,000 feet for 1934 and 2,449,445,000 for 1933. The number of industrial consumers also increased, from 230 in 1933 to 248 in 1934. Domestic consumers numbered 30,380, and used 1,889,842,000 feet of gas.

NATURAL GAS CODE

The natural gas code committee has agreed with the National Industrial Recovery Administration to recommend to the industry a modification of the pending natural gas code so that the minimum wages and maximum hours for rig building and well drilling, but not operation, in natural gas fields shall correspond to the minimum wages and maximum hours for the same classes of employes as specified in the petroleum code. The code committee has further agreed that pending final disposition of the natural gas code the above suggested modification shall apply to the President's Re-employment Agreement as modified under which the natural gas industry is now operating.

Proposal to Utilize Texas Panhandle Gas for Development of Electric Power

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 16.—Utilization of natural gas in the Texas Panhandle by construction of a pipe line approximately 1,200 miles long, from near Amarillo, Texas, to St. Louis and Detroit is being considered by Public Works Administrator Ickes, but other proposals designed to use this gas and avoid the present waste have also been submitted informally for consideration.

One of these proposals is being sponsored by Representative Marvin Jones of Amarillo. He suggests that this gas be used to develop electric power for which he says there is sufficient undeveloped marketing area to make it feasible. This plan, he claims, could be developed at much less cost and would provide greater employment than would the pipe line project, while at the same time it would benefit the people of the state. Besides this, he contends, it would not imperil investments already made by private enterprise as would be the case under the pipe line proposal.

Construction of the pipe line with the assistance of Public Works funds would entail the laying of approximately 1,200 miles of pipe if one line is built to supply both St. Louis and Detroit, but if two lines are laid, one to each city, this length would be raised to approximately 2,000 miles. Unofficial estimates place the cost of merely laying the line, on a single line basis, at approximately $16,000,000, while the double line would probably cost about $25,000,000. Besides this cost must be added the charges for securing the rights of way, which it is expected that Federal government will assist in obtaining under the Federal Government's power of eminent domain. This method of securing the rights of way, it is claimed, would be much cheaper than if the state or an individual went into the market and attempted ot purchase them.

Allred's Suggestion

Governor Allred is reported to have stated that the building of a pipe line would very materially reduce the wastage of gas in the field, and would also provide a market for the independent producers, who because of the lack of an outlet for their gas were forced to strip the gas for its gasoline content. This project could also be used as a measuring stick on the price of gas to the consumer, the governor stated, just as the government is using the Tennessee Valley authority in the field of electrical power.

Representative Jones, however, does not believe that this pipe line project could be used satisfactorily as a "rate yardstick," due to the long way from the field to St. Louis and Detroit. It is his opinion that the charges for transportation would be so high as to destroy any opportunity of greatly reducing gas rates of the existing companies operating in the two cities. The congressman made it clear, though, that he would not block, nor in any way interfere, with any plan proposed for the elimination of the wastage of gas. He is heartily in favor of any measure which will alleviate conditions in that area.

Mr. Jones claims there is more potential electric power in the gas fields of the Panhandle than it would be possible to develop by all the water power projects in the United States. This power could be very cheaply produced from the gas resources of the field and would electrify a section of the country into which no electric system has as yet been carried. There is no coal and no timber in that section which could be utilized for either heat or light, he says, so the use of the gas would not be in any way competitive with private enterprise.

The details of the operation of the Congressman's plans have not been worked out, but he suggested that a state corporation could be set up by the legislature, or an authority such as TVA could be established within the state which would manage the production and distribution of the product.

It might become necessary to change or amend some of the state laws, but it is not anticipated that it will be necessary. One law which he mentioned as perhaps needing change was the "stripper" law.

Although Representative Jones has not discussed his plan with Administrator Ickes, he has been apprised of the fact by some of his assistants who have given the matter favorable mention during informal discussions with the congressman.

Favorable Reception

These proposals are not yet formally before the Public Works Administration for consideration, but from the reception given to them, and the consideration shown when informal discussions took place there is little doubt that the most feasible plan would be given the sanction of the Administrator when actually presented. Although the Administrator has never, in advance of formal approval, stated his position on specific projects, his enthusiasm for plans which would eliminate gas wastage is a clear indication that he is in favor of such proposals.

The future life of the Panhandle Field has been estimated to be 17½ years, if the present rate of gas consumption is continued. With proper waste prevention measures, it has been stated, the field can be kept in production for at least that period of time. Opinion generally is that unless the waste is curbed it will not last nearly that long, some observers giving the field a life of only about half that time if the waste continues to increase as it has in the past few years.

NATURAL GAS LINE

CHATHAM, Ontario, Feb. 16.—The new 4-inch natural gas line laid by Southern Ontario Gas Co. from the Gilbert Pardo lease in Raleigh Township, Kent County, to the main transmission line near Merlin, is being welded. It is expected the line will be ready to take production by March 1.

LONDON GAS PROPOSITION

LONDON, Ontario, Feb. 16.—Representatives of the London city council will confer with the City Gas Co. regarding the plan to supply natural gas to London from the Dawn Field in Lambton County. The franchise proposal may be submitted to vote at a special election in the summer.

California Production Increased in Past Year

LOS ANGELES, Calif., Feb. 16.—Natural gas production in California during 1934 averaged 281,300,000 feet per day, an increase of 21,100,000 feet over the daily average recorded for the preceding year.

Sales of dry gas to public utilities during 1934 increased to an average of 180,400,000 feet daily compared to 166,700,000 feet daily for the year before.

Plant and fuel utilization of dry gas, however, dropped last year to a daily average of 86,600,000 feet compared with the preceding year's daily average of 93,400,000 feet. Likewise the brightening record of the past few years in the reduction of the amount blown to air was slightly dimmed, the blow of dry gas last year averaging 16,900,000 feet daily against the previous year's record low of 12,100,000 feet daily average.

October of 1934 scored a new peak for dry gas sales with a daily average of approximately 18,000,000 feet, the month of December being a close second with a daily average of 17,600,000 feet.

Gas Line Proposed for Supplying Clare, Mich.

MUSKEGON, Mich., Feb. 18.—The city council at Clare, Mich., has authorized a preliminary survey for a pipe line to transport natural gas from the McKay-Mercier gas wells in Grant Township, Clare County, to the village to provide a new outlet for this field in which all wells have been shut in since completion over a period of several years. The survey was ordered with the prospects of substituting Clare County gas for the supply now coming from the Vernon Township, Isabella County, Field through the Gas Corp. of Michigan, whose franchise expires shortly.

The Clare Pool is credited with seven producers with an aggregate initial open flow of 31,780,000 feet a day and estimated reserves of 920,000,000 feet in a proved area of about 700 acres. No new wells were drilled during 1934, with only two dry holes near the field. Development has been delayed by lack of outlet.

D. C. SHAFFER RESIGNS

MEMPHIS, Tenn., Feb. 18.—D. C. Shaffer, for six years vice president and general manager of the Memphis Natural Gas Co., has resigned to devote his time to oil and gas interests in Fayette County, Tennessee, and Montgomery County, Mississippi. Mr. Shaffer, formerly president of Durango Natural Gas Co. in Colorado, said he has leased 80,000 acres in the vicinity of Laconia, Tenn., and is drilling for gas and oil.

Milton S. Biswanger, chairman of the board of the Memphis Natural Gas Co., an affiliate of the Commonwealth Gas Corp., said no successor will be named for Mr. Shaffer.

EDMONTON ASKS GAS TAX

EDMONTON, Alberta, Feb. 16.—The Edmonton city council is planning to seek special legislation empowering the city to levy a tax of 5 per cent annually on the gross receipts of Northwestern Utilities, Ltd. The company, which supplies natural gas to Edmonton, pays the city 5 per cent on its gross receipts under its franchise agreement, the 1934 payment approximating $45,000. The agreement expires in November, 1935.

Interest of Chicago Market Centers on Reported Plans for Gasoline Buying

By SPECIAL CORRESPONDENT

CHICAGO, Feb. 18.—Interest in the oil trade in this area continues to be centered upon reported plans for major company support buying in the gasoline tankcar market. New buying on the part of the jobbing trade has been limited to extremely small proportions. The general view here is that the hoped for buying will provide the needed impetus to push prices to substantially higher levels, by taking virtually everything offered. In general, sentiment here is much more optimistic.

The virtually stabilized tank wagon and service station markets of the Middle West are a factor in the general feeling that the bottom has been reached and that any change will be for the better. While jobbers are not as a class buying much more actively, they are paying a little more attention to the market and a few large jobbers have inquiries out for large quantities. A price of 3¼ cents has been representing the low of the low-bracket motor market, but the material has been growing harder and harder to find at that price.

Outlook Encouraging

Michigan and Kansas now represent the principal and about the only areas of the Middle West in which general stabilization is not a fact, it was reported at a stabilization committee meeting here a few days ago. The reports said generally the outlook was encouraging. The same meeting developed the feeling on the part of virtually all major company representatives that expansion of retail outlets had been generally overdone and that such expansion should not proceed further.

Kerosene

Kerosene is showing strength, with refiners apparently putting material in storage and waiting for the appearance of a demand for early plowing purposes a few weeks hence. Demand is keeping up and prices in general are firm to slightly stronger.

Heating Oils

The heating oils are spotty, unchanged to a shade easier, with more than normal spread between these products and kerosene. Weather has not stimulated demand very greatly and distributors' rates of buying have kept down accordingly. Best products, however, are still commanding fairly good tank car market prices. Gas oils and zero fuels remain in moderate call.

Industrial Oils

A somewhat better industrial activity rate has so far not helped industrial fuels and gas oils materially. Contracts for these products are being exercised to quite an extent and some improvement is hoped for by sellers.

Lubricating Oil

The lubricating oil market is quiet. Prices seem to be firmer than was the case a few weeks ago, and yet actual volume of buying has shown little response. Inquiries from both jobbers and compounders have been coming through fairly well, indicating potential buying.

Wax is easy. Stocks have increased as an aftermath of reduced orders. Buyers are showing a more hesitant tendency, especially in view of lower crude scale prices.

Naphthas

Slowness and a tendency toward spottiness is reported in some of the naphthas and solvents. Quoted prices officially are about the same, but some shading has been reported here and there.

Petroleum coke is marking time. The price situation is one of a fair amount of firmness. Buying is moderate.

Crude Oil Prices

(Continued from Page 25)

Humble Oil & Refining Co. and Texas Co. Effective September 20 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.94
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.80
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933)	
See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Sept. 29, 1933)	.62
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 16, 1932)	.92
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome:	
Below 18° (July 1, 1934)	.52
18° and above (July 1, 1934)	.62
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera (Sept. 29, 1933)	1.25
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co. Pondera, Mont., by Ohio Oil Co. (Stanolind Oil & Gas Co., effective January 1, 1935, posted $1 per barrel in Pondera.)

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos, Urania, La. (Jan. 13, 1934)	.37
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.03
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.03
Pleasant Hill, La. (Mar. 17, 1934)	1.03
Zwolle, La. (Mar. 17, 1934)	1.03
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.03
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urbana posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co. Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective Feb. 4, 1935)

Bradford, Pa.	$2.35
Allegany, N. Y.	2.35

SOUTH PENN OIL CO.
(Effective Feb. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.35
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.02
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.97
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.37

PENNZOIL CO.
(Effective Feb. 4, 1935)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.37
Group B (Includes Titusville district.)	2.36
Group C (Includes Turkey and Tidioute districts.)	2.35
Group D (Includes Bear Creek and Porkey districts.)	2.24
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacey and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City.)	2.31

PURE OIL CO.
(Effective Jan. 4, 1935)

Cabin Creek, W. Va.	$1.82
Bradford Hollow, W. Va.	1.82
Kelly Creek, W. Va.	1.77

CREW-LEVICK CO.
(Effective Jan. 4, 1935)

Oil City-Titusville	2.12

Middle Western States

OHIO OIL CO.

Lima (Feb. 1, 1935)	$1.15
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Western Kentucky (May 26, 1934)	1.03
Midland, Mich. (Sept. 30, 1933)*	1.02
West Branch, Mich.	.86
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.23

*Posted by Pure Oil Co. and Simrall Pipe Line Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted prices. West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.55
Discolored naphtha	2.37
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.50

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Mexico

Panuco*	$1.01

*F.o.b. ship, based on January transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA

(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.72	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.03	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Mountain View—Effective July 3, 1934, the following are the prices of the Standard Oil Co. of California for its current purchases of crude oil at the well in the Mountain View Field: 14 to 19.9 degrees, 57 cents; 20-20.9, 58 cents; 21-21.9, 59 cents; 22-22.9, 61 cents; 23-23.9, 63 cents; 24-24.9, 66 cents; 25-25.9, 69 cents; 26-26.9, 72 cents; 27-27.9, 75 cents, 28-28.9, 78 cents; 29-29.9, 81 cents; 30-30.9, 84 cents; 31-31.9, 87 cents; 32-32.9, 90 cents; 33 degrees and above, 93 cents.

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 26-26.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchases, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33--33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 36 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended Feb. 16 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
56¾	48½	900	54	53⅝	54	Amerada Corp.	774,875	N.P.	50cQ	1-31-35	$2.00	55⅝	39	47⅝	18½
25⅝	23¾	3,100	24¾	24¼	24¾	Atlantic Refining	2,673,834	$25	25cQ	3-15-35	1.00	35¼	21½	32½	12¾
7	6	4,500	6½	6⅛	6⅝	Barnsdall Corp. A	2,248,795	$5	....	5-11-31	....	10	5⅞	11	3
7¾	5	39,900	6⅝	5	5¼	Columbia Gas & Elec.	11,610,036	N.P.	....	5-15-34	‡ .25	19¼	6⅝	28⅛	9
8¾	7⅜	6,600	7¾	7½	7⅝	Consolidated Oil Corp.	14,218,835	N.P.	14c	10-31-34	.42	14¼	7¼	15¾	5
19¼	16¾	4,000	18⅜	17⅞	18¼	Continental Oil of Delaware	4,738,593	$5	25c	10-31-34	.50	22¾	15¾	19⅝	4⅞
18⅞	15⅛	800	16	15¼	15⅞	General Asphalt	387,149	$10	....	6-15-32	....	23½	12	27	4⅛
3⅝	2⅝	900	2⅞	2⅝	2⅝	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅞
1⅞	1	200	1⅛	1⅛	1⅛	Louisiana Oil Refining	1,302,158	N.P.	....	....	....	3⅜	¾	4	⅝
12⅞	11	1,300	11¾	11⅜	11⅝	Mid-Continent Petroleum	1,857,912	$10	25c	11-15-34	.50	14¾	9⅛	16	3¾
14⅝	11	200	12¾	12	12¾	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
10⅞	9½	2,400	10	9¾	10	Ohio Oil Co.	6,563,107	N.P.	15c	12-15-34	.45	15⅞	8½	17⅝	4¾
8½	7	300	7¾	7¼	7¾	Pacific Western Oil	1,000,000	N.P.	40c	11-30-34	.40	9⅜	5½	9½	3
1⅝	¾	No sales ..	..	..	..	Panhandle P. & R.	198,770	N.P.	....	.....	....	2½	⅝	4¼	⅜
16	14¼	3,100	15¼	14⅜	15	Phillips Petroleum	4,154,687	N.P.	25c	3-1-35	1.00	20⅜	13⅜	18¾	4¾
8¾	7⅛	1,000	7⅝	7⅜	7⅜	Plymouth Oil Co.	1,014,082	$5	4% Stk.	12-22-34	75c & 4% Stk.	16¾	7¼	17⅝	6¾
7¾	6⅝	1,900	6⅞	6⅝	6⅝	Pure Oil	3,038,370	N.P.	....	9-1-30	....	14⅞	6½	15⅜	2½
32⅜	29¾	200	30¾	30¾	30¾	Royal Dutch N. Y. shares	432,224	$14	$1.35	7-31-34	1.35	39⅛	28⅝	39¾	17⅝
26⅞	21	800	25⅜	25	25⅜	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ†	12-15-34	1.00	38⅜	20¾	43⅜	15
7⅞	6⅝	1,500	6⅞	6⅝	6⅞	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
73¾	68¾	200	74⅛	73¼	74⅛	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18¾	15	800	15¾	15¼	15½	Simms Petroleum	461,698	$10	50c	2-1-35	.55	17⅛	7¼	12⅜	4⅛
7⅝	6½	800	7⅝	7⅜	7⅝	Skelly Oil	1,008,514	$25	.	12-15-30	....	11½	6	9⅞	3
14⅞	13½	11,400	14	13⅝	13⅝	Socony-Vacuum	31,019,694	$25	15cQ	3-15-35	.60	19⅞	12½	17	6
32¾	29⅝	4,500	30¾	30	30¼	Standard Oil of California	13,102,900	N.P.	25c	3-15-35	1.00	42⅞	26½	45	19½
25¼	23¾	6,600	24⅛	23¼	24	Standard Oil (Indiana)	15,941,894	$25	25cQ	3-15-35	1.00	32¾	23¼	34	17
30⅛	30	No sales ..	..	..	..	Standard Oil of Kansas	200,000	$10	50cQ	10-31-34	2.00	41	26	39⅞	12¾
43½	39⅝	10,200	41	40⅛	40⅝	Standard Oil of New Jersey	25,740,065	$25	50cSA†	12-15-34	1.25	50⅛	39¼	47½	22¾
67½	65	1,300	67	66	67	Sun Oil	1,733,013	N.P.	25cQ	3-15-35	$1 & 9% Stk.	74¼	51½	59	35
21⅝	19	2,600	20	19⅝	20	Texas Corp.	9,486,417	$25	25cQ	1-1-35	1.00	29⅜	19⅝	30⅛	10¾
4¼	3¼	200	3¾	3¾	3¾	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅜
10	8⅜	2,500	9	8½	8¾	Tide Water Associated	5,618,672	N.P.	....	2-16-31	....	14⅜	8	11⅜	3¼
87½	84	1,700	86⅞	86	86⅞	Tide Water Associated pfd.	666,524	$100	$2.	12-22-34	§8.50	87	64½	65¼	23½
16⅝	14⅜	1,800	16¼	15¼	15⅝	Union Oil of California	4,386,070	$25	25cQ	2-9-35	1.00	20½	11½	23⅜	8½
26⅛	24½	800	25½	25⅛	25⅛	Union Tank Car	1,200,000	N.P.	30cQ	3-1-35	1.20	25⅜	15⅝	22⅜	10½
2⅝	2⅛	200	2⅛	2⅛	2⅛	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¾	2	5½	2

*Ex-dividend. †Plus extras. ‡Payable in preferred stock. §On account of accumulated dividends.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended Feb. 16 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
33	30½	50	32	32	32	Buckeye Pipe Line Co.	200,000	050	75cQ	3-15-35	$3.00	38	26	39¾	25
2⅜	1⅜	600	2	1¾	1¾	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	⅛
152½	140	300	152½	148¼	152	Chesebrough Mfg. Co.	120,000	$25	$1Q†	12-28-34	11.50	150	116	129	71
1½	1	28,700	1¼	1	1	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1½
⅛	⅜	200	⅞	⅞	⅞	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	⅛
⅞	⅝	100	¾	¾	¾	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1⅜
13⅜	11½	1,100	12	11⅝	11⅝	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4⅜
4⅞	4½	No sales ..	..	..	..	Darby Petroleum	500,696	$5	25c	1-25-35	.50	7½	4⅛	8	2⅛
1⅛	⅞	No sales ..	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
38	34	100	38	38	38	Eureka Pipe Line	50,000	$50	$1Q	2-1-35	4.00	37	30	41¾	20
60⅞	55	2,300	57	56⅜	56⅞	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
49	44	5,100	49	47¼	48½	Humble Oil & Refining (new)	8,923,935	N.P.	25cQ	1-2-35	§1.25	49½	33¼	105½	40
17⅛	16¼	4,800	16⅝	16⅜	16¾	Imperial Oil of Canada	26,857,152	N.P.	25cSA†‡	12-1-34	.92½	17⅞	12⅝	15⅞	6½
4⅛	3⅞	100	4⅛	4⅛	4⅛	Indiana Pipe Line	300,000	$10	15cSA†	11-15-34	.35	6⅞	3⅝	8	3⅛
31⅜	28⅞	2,500	30⅛	29⅝	29¾	International Petroleum	14,247,088	N.P.	56cSA†‡	12-1-34	2.28	33⅜	19⅜	23½	8⅞
5⅜	4⅜	9,400	6	5⅛	5⅞	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅛
4⅜	3⅜	100	3⅞	3⅞	3⅞	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
6¼	5¼	500	5½	5¼	5¼	Lone Star Gas	5,382,723	N.P.	15c	2-15-35	‖ .16	8⅜	4¼	11⅞	4⅜
4⅝	4⅛	200	4⅜	4⅜	4⅜	Mountain Producers	1,682,182	$10	15cQ	1-2-35	.60	5½	4	6¼	2¼
13⅝	13	700	13½	13⅜	13½	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-34	1.00	18⅛	13⅛	20	10
7¾	6⅝	No sales ..	..	..	..	National Transit	509,000	$12.50	35cSA	12-15-34	.75	9½	7	10	5½
2⅝	2⅛	200	2⅛	2⅛	2⅛	New Bradford Oil	1,445,202	$5	10cSA	3-15-35	.20	2½	1¾	2⅛	½
2⅛	1⅜	No sales ..	..	..	..	New Mexico and Arizona	1,000,000	$1	....	.....	....	2⅜	1	1⅞	⅛
3⅝	3¼	No sales ..	..	..	..	New York Transit	100,000	$5	15cSA	10-15-34	.30	4¾	3	4⅞	.5
5⅝	5¼	No sales ..	..	..	..	Northern Pipe Line	120,000	$10	25cSA	1-2-35	.50	7	4⅝	6½	4⅛
2⅛	1½	400	1¾	1⅝	1¾	Pantepec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3¾	⅛
1¼	1⅛	No sales ..	..	..	..	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
6¼	5¾	400	6	6	6	Salt Creek Producers	1,496,859	$10	20cQ	2- 1-35	.80	7⅞	5½	9¼	3½
23¾	22¼	1,100	23⅛	23	23	South Penn Oil	1,200,000	$25	30cQ	12-31-34	1.20	26½	17½	22⅛	11
4	3⅞	No sales ..	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-35	.25	5½	3½	6	2⅛
52½	50	100	50	50	50	Southwest Penna. Pipe Lines	35,000	$50	$1Q	12-31-34	5.00	47	41	43	24½
21½	18	4,300	21¼	19¾	21¼	Standard Oil of Kentucky	2,606,983	$10	25cQ†	3-15-35	1.50	18⅝	14⅝	19¼	8⅝
9	8½	100	8½	8½	8½	Standard Oil of Nebraska	190,822	$25	....	6-20-34	.50	16⅞	8¼	20½	11
16¼	13	100	14	14	14	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
1¼	1	700	1⅛	1⅛	1⅛	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	⅛	1½	⅛
6⅞	5⅝	600	5⅞	5¾	5¾	Texon Oil & Land	936,028	N.P.	15cQ†	12-29-34	.90	11	4⅝	13¾	6¼

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Includes 50 cents on old $25 par value stock. ‖Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannnot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Acid Apparently Has Eaten Away Seat and Casing Has Settled

In acidizing a shallow well, about 700 feet deep, it was found that the 650-foot string of 6¼-inch 13-pound casing originally set with casing shoe resting upon a limestone shell about 50 feet above the bottom of the hole had settled about 4 feet and muddy water was entering the hole. The well made about three-quarters of a barrel of oil a day from a sandy limestone formation and it is believed that the rate of flow has been increased by the use of acid, but because muddy water is now mixing with the oil it is difficult to estimate what capacity the well has. What might be done to determine the well's new capacity, shut off the water and reseat casing?—W. S.

It would appear from your statement that the acid used in treating the sandy lime formation has attacked the limestone cap above that formation and eaten away the seat of the casing shoe. This has permitted the string of casing to settle, and from your description of this casing it is judged that it is old, because the 13-pound pipe is not a common weight now.

If this is an old string of pipe it will be difficult to pull it without accident. It might be strong enough to permit removal from the hole and making a thorough examination of each joint at the surface, but it probably would be safer to try to determine whether the water is flowing around the shoe or entering the well through holes in the casing. If the casing settled as much as 4 feet after the acid had been applied to the well it is quite probable that water is entering around the casing shoe, but to be certain it is suggested that the following test be made.

Bail out all fluid possible and note the approximate quantity and its character, that is, proportions of water and of oil. If the hole can be bailed practically dry, allow the well to stand for 24 hours and then determine the height to which the fluid has risen in the well, which will give some idea of the rate of flow. Again bail out this fluid, and if it is possible, carefully check each bailer to determine the quantity of fluid removed and to ascertain the oil and water proportions.

If the quantity of fluid removed is expressed in volume based upon 5.6 cubic feet per barrel, it will be possible to get some idea of the size of the hole at the bottom of the well, and if this is a shot hole below the casing seat it will be possible to determine the relative position of the top of the fluid to the cased hole and also the volume of the hole below the casing seat.

If a sand pump type bailer is used it will be possible to clean the hole thoroughly of fluid and debris. If the well was thoroughly cleaned before being allowed to stand 24 hours it will be possible to determine something about the proportion of mud to water and it will be possible to have the water analyzed and check it against any other known water sands in the vicinity of the well.

It will be desirable to remove the casing clamps from the top of the casing string and allow this pipe to settle as far as it will while the fluid is flowing into the well. It is suggested that another joint of pipe be screwed into the top collar before removing the clamps so that it will be possible to get hold of the pipe at the surface if it should start to drop too far into the hole.

It is not anticipated that the casing will settle rapidly, but it is hoped that a new casing seat will be encountered as the pipe sinks and in this way the water now entering the well will be shut off. If this does happen your problem will be solved and it is recommended that if this reduces the rate of water flow into the well nothing further be done for it is believed that mud will pack back of the casing above the casing seat and in time all water will be cut off from entering the well.

If the above procedure does not give a water shutoff it will be necessary to try to pull the pipe, at least to lift it off bottom several feet. If it is strong enough to withstand this pull it is suggested that the hole be filled with limestone impregnated mud to seal off the producing formation. Make the mud thick enough to assist in forming a footing for some kind of a packer to be placed in the well below the casing seat. This limestone mud can be removed by bailing and acidizing.

The size and shape of the hole below the casing seat can only be estimated, but as it is possible to determine its cubic contents quite closely, the mud dumped into the hole can be measured so that it will only fill the hole to a depth below the casing seat and leave ample room in which to place some other material to form a seal that will be impervious to cement. The cement then can be dumped into the hole, filling up the space far enough above the casing seat to permit the raised string of casing to be lowered into the cement and a portion of the cement to be forced back of the casing.

With such a small well and with the results of acidizing still unknown, it is suggested that the well be more or less left alone for several days, with the casing free to lower itself into the hole during the time the well is permitted to produce without repair, and that the fluid and mud be bailed out at frequent intervals and measured carefully to determine rate of flow into the well of all fluid and mud. If the water and mud decreases from time to time it is best not to disturb the casing. In an old well of this kind water leaks will usually seal off automatically if the flow of water is not too great.

Portable Rigs for Drilling Have Advantages and Limitations

Could you give me a bit of information concerning the practical usefulness of portable drilling rigs in the oil field? Just how deep can they be used? It seems as though they ought to save an operator money if he doesn't have to go too deep for his oil.—T. A. E.

The portable drilling rig has established a place for itself in oil fields where it is adaptable. Its advantages and the conditions under which it may be used are discussed by L. C. Uren in "Petroleum Production Engineering":

"The portable rigs have certain well-defined advantages and limitations. For drilling in shallow territory the cost of the well may be materially reduced since there is no necessity for the building of a derrick or other expensive fixed surface plant. Shallow wells can often be operated in multiple with simple pumping jack at each well, and such repairs as are necessary after the well becomes a producer may also be handled by a portable pulling outfit mounted on a truck. For prospecting work where the formations to be tested are within reach of the portable machines, they have the great advantage of ease in transportation. They are more readily dismantled and reassembled and therefore have a relatively greater salvage value after drilling a dry hole.

"One of the serious disadvantages of the portable rigs is found in their inability to handle satisfactorily the heavy strings of casing necessary in drilling through unconsolidated sands and caving formations. In many regions where the tools can be operated in uncased holes to great depths this limitation is of course not a serious matter. Some of the manufacturers, in striving to adapt their machines to more difficult conditions, are giving attention to this phase of the work and have added calf drums which are a step toward a real solution of the difficulty. Another disadvantage is the relatively short stroke of the walking beams or spudding devices provided in most of the portable machines. The beams are usually from 2 to 6 feet shorter; and at depths greater than 1,500 feet, when stretch in the cable becomes a factor of importance, the effective stroke of the tools becomes so short that the portable rig is much less efficient. Though some of these rigs are rated by the manufacturers for depths in excess of 3,000 feet, it is doubtful if many operators would undertake the drilling of a deeper hole than this with a portable rig. The principal field of most of the portable rigs, as at present designed, would appear to be in drilling wells in formations that do not cave readily and to depths not greatly in excess of 2,500 feet."

Diameter of the Casing Coupling Determines Size of the Hole

How much larger should the drill hole be than the casing and how much larger should the hole be than the casing if you were going to cement the hole?—A. H. W.

In rotary drilling, and to a large extent in cable tool operations, the size of the drill hole is determined by the outside diameter of the coupling used on the casing. If the hole is large enough to accommodate the couplings freely it is of sufficient size to permit cement to be placed back of the casing and wall up the hole. In other words no special provision is made as to hole diameter for cementing but the size hole drilled is largely determined by the character of the formation penetrated and to allow for occasional deflection of the axis and inequalities of bore.

In California fields it is customary to drill a 19-inch diameter hole for 13⅜-inch casing; a 12¼-inch hole for 9⅝-inch casing; and an 8¼-inch or 8½-inch hole for 6⅝-inch casing. Other variations in different fields follow:

Casing Size	Casing Wt.	Coupling O.D. (inches)	Hole diameter (inches)
OKLAHOMA CITY			
8	40	10.01	12
9⅝	40	10.625	12¼
6⅝	26	7.39	8 or 7⅞
6⅝	24	7.39	8 or 7⅞
7	24	7.656	8⅝
4½	16	5.364	5⅝
5	15	5.491	6⅛
GULF COAST			
13⅜	61	14.375	17½
9⅝	40	10.625	12½
7	28	7.656	8⅝
HOBBS POOL, NEW MEXICO			
9⅝	40	10.625	12¼
7	24	7.656	8⅝
BIG LAKE FIELD, TEXAS			
13⅜	61	14.375	16
9⅝	40	10.625	12¼
7	30	7.656	8⅝
7⅝	34	8.500	9⅞

Why Was It Called That?

DIRTY CREEK

Dirty Creek, which rises about 1½ miles southeast of the Keefeton oil pool in Muskogee County, Oklahoma, and empties into the Canadian River, is said to have been known originally as Darden Creek, deriving this name from a French family named Darden. In the course of time the name was corrupted to Durdy, and from this it was only a short step to Dirty. Emmett Starr, in his Encylopedia of Oklahoma, offers another story. He says: "The proper name of this creek is Terre d'Inde, pronounced dar-deene and meaning 'Land of the Turkey' Creek."

PERSONAL PARAGRAPHS

FRED PHILLIPS, president of Reserve Petroleum Corporation, of Tulsa, has been visiting the Jim Wells County area of Southwest Texas.

• • •

E. W. DANIELS, head clerk for Humble Oil & Refining Company, at Tomball, Tex., has been transferred to Dickinson, Tex., as assistant chief clerk and warehouseman.

• • •

H. O. DIKES, of Balboa, Canal Zone, a member of the Union Oil Company's staff in the Canal Zone, has been enjoying a brief vacation with MRS. DIKES in California.

• • •

F. O. WILKINS, superintendent of the Atha Oil and Atha Drilling Companies, of Mount Pleasant, Mich., is spending a month in St. Petersburg, Fla., as the guest of W. HUNTER ATHA, who recently went to St. Petersburg.

• • •

LESTER A. LUECKE, formerly chief geologist for the Colombian Petroleum Company, a Colombian subsidiary of the Gulf Oil Corporation, has recently been added to the geological staff of the Gulf Oil Corporation in Pittsburgh, Pa.

• • •

A. E. WATTS, of the Consolidated Oil Company, was in Washington, D. C., for several days on business.

• • •

R. M. JONES, assistant accountant for the Honolulu Oil Company, has been transferred from Denver, Colo., to Midland, Tex.

• • •

B. H. MURPHY, assistant engineer, U. S. Geological Survey, has been transferred to the Tulsa office from Oklahoma City, Okla.

• • •

O. M. MASON, president of the Mason Oil & Gas Company, New York, has returned to his headquarters after a trip to West Texas.

• • •

JULIUS F. FOHS, president of the Fohs Oil Company, at Houston, Tex., was called to New York, due to the serious illness of his sister.

• • •

GEORGE M. McCARTY, district petroleum engineer of the Humble Oil & Refining Company, at Hull, Tex., has been transferred to Pampa, Tex.

• • •

ED BLACK, drilling contractor of Midland, Tex., was recently married to MISS DOROTHY SNIDER of that city, at the home of the bride's parents.

• • •

LESLIE AIRTH, of Regina, Saskatchewan, western sales manager of the Tide Water Oil Company, visited Calgary and other Alberta points recently.

• • •

CHRIS BENNETSEN, well known in the Turner Valley Field, is in charge of a test for gas being drilled by Franco Oils, Ltd., near Cardston, Alberta.

• • •

J. D. CUMMINGS, with Crutcher, Rolfs & Cummings, pipe line contractors of Houston, Tex., has returned to Houston after spending several weeks in Kansas.

• • •

WIRT FRANKLIN, president of the Wirt Franklin Petroleum Corporation, was in Washington, D. C., on business with the Planning and Coordination Committee of which he is a member.

RALPH M. MOON, of the Moon Marketing Company, Tulsa, has returned from Arkansas City, Ark., where he and his family were called last week by the death of MRS. MOON'S father, W. B. CRAIG.

• • •

STANLEY HEROLD, consulting petroleum engineer, at present doing special work for the Union Oil Company, was the speaker at the monthly meeting of the Los Angeles Petroleum Accountants Society.

• • •

WILLIAM WILSON, eastern manager of the Republic Oil Refining Company with headquarters in New York City, is spending a 30-day vacation at Miami and other Florida points. He will also visit Cuba and the Canal Zone before returning.

• • •

LOUIS M. DEUTSCH, formerly representative for the Happy Belting Company in the East Texas Field, with headquarters at Kilgore, has been transferred to Tulsa and made city salesman. PAT KILLINGSWORTH, storeman for the company at Seminole, Okla., has been transferred to Kilgore to take charge of the store.

C. R. FLEISHMAN has been elected a member of the board of directors of the Rice Ranch Oil Company, succeeding P. H. O'NEILL, who recently resigned.

• • •

C. S. ROBERTSON, formerly development engineer for the Southern Electric & Transmission Company, Dallas, Tex., has joined the telephone and telegraph department of the Texas Company and has moved to Houston, Tex.

• • •

R. C. VAN ANTWERP, Muskegon, Mich., sales manager of the Standard Oil Company (Indiana), has resigned and W. M. HOXIE, of Battle Creek, Mich., has been named as his successor. Mr. Van Antwerp had been associated with the Standard company for 14 years.

• • •

G. STUBBE, manager of the Houston, Tex., office of the American Askania Corporation, recently returned from a business trip to Germany where he looked into the latest developments of geophysical equipment and its possibilities in America. He reports a considerable increase of geophysical activities in Germany and other parts of Europe.

• • •

ROBERT WILKINSON, of Calgary, Alberta, associated with a number of Turner Valley oil projects, is taking a trip to California.

• • •

W. C. FISHER, of Calgary, Alberta, president of Model Oils, Ltd., will leave shortly on a business trip to Victoria, British Columbia.

• • •

PARK KELLEY, general manager of the Ozark Chemical Company of Tulsa, is spending several days on business in Kansas City.

• • •

DR. T. N. SPELLER, chief metallurgist of the National Tube Company, Pittsburgh, Pa., returned last week from a trip to the West Coast.

• • •

EARL J. BROBERG, formerly with Parkersburg Rig & Reel Company in Houston, Tex., was a visitor to Tulsa and Topeka, Kans., last week.

• • •

R. O. LOWRANCE, in charge of the land department for Sinclair Prairie Oil Company, at Houston, Tex., was a business visitor to Tulsa last week.

• • •

SAM MESSER, vice president of the Quaker State Oil Refining Corporation, Oil City, Pa., and MRS. MESSER, are vacationing at Miami Beach, Fla.

• • •

T. A. HALL, chief engineer for the Tide Water Oil Company, has returned to Houston, Tex., after a six weeks' business trip to the company's offices at New York.

• • •

T. A. HELLING, secretary, and C. W. RICE, sales manager of the Eldorado Refining Company, Eldorado, Kans., attended the Iowa Petroleum Association convention at Des Moines.

• • •

HARRY H. POWER, petroleum engineer, Gypsy Oil Company, Tulsa, and nominated for chairman of the Petroleum Division of the American Institute of Mining Engineers, is attending the annual meeting in New York City and will make business calls in other eastern cities before returning.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

February 19, 1910

A party of prominent Pennsylvania oil and gas men are making a tour of the Oklahoma and Texas and Louisiana oil fields. The party, traveling in a special car, includes George W. Crawford, L. E. Mallory, C. E. Crawford, J. B. Crawford, H. J. Crawford, Theodore Wilson, Dr. F. G. Crittenden, Harry Heasley, H. B. Mitchell, and N. F. Graham. They are stockholders in the Devonian and Hecla Oil Companies. J. H. Evans entertained the party in Tulsa.

Osage County, Oklahoma, cattlemen saved their herds from freezing by tapping gas lines and igniting the fuel. The shivering kine huddled near the fires and lived, but nearby towns suffered from a gas shortage.

Crude oil prices in Oklahoma and Kansas range from 28 to 35 cents per barrel. Pennsylvania Grade oil sells for $1.40. Corsicana light crude is priced at 70 cents and Henrietta, Tex., crude at 53 cents. Gulf Coast prices range from 72 to 80 cents.

Ben C. Taber, an active figure in the oil development of the Gulf Coast, died in Houston, Tex.

20 Years Ago

February 18, 1915

John H. Markham, Jr., sells his oil properties in the Cushing Field, in Oklahoma, to the Carter Oil Co., an eastern subsidiary of the Standard Oil Co. of New Jersey. The sale includes storage tanks, 900,000 bbls. of stored crude, one lease producing 17,500 bbls. per day, and one undeveloped lease, pipe lines and pump stations. This purchase means the formation of a western division of the Carter Oil Co., and J. Edgar Pew is expected to be the operating head, with headquarters in Tulsa.

Dana H. Kelsey is presented with a chest of silver by employes of the Muskogee Indian Agency of which formerly he was the head.

Dr. George Brown dies in Rockford, Ill., at the age of 95 years. He organized the firm of Brown, Solomon & Co., of Lawrence, Kans., which in 1860, drilled the first well to show oil production in Kansas. The oil was discovered in Miami County at a depth of 100 feet.

10 Years Ago

February 19, 1925

A lease of 455 acres with 180 old wells in the 50-year-old Bradford Field in Pennsylvania sells for $700,000, or at the rate of $1,538 per acre. It will be "flooded" by its new owners.

In less than a month the Wortham Pool (Woodbine sand), in Texas, drops from 186,000 bbls. to 70,000 bbls. per day in production, and from an average of 2,471 bbls. per well to 270 bbls. per well per day.

Mid-Continent crude oil purchased on the gravity basis was advanced 20 cents per barrel, the new prices ranging from $1.35 to $2.35 per barrel, with 36 gravity oil at $2. Gulf Coast crude is advanced to $2 per barrel. Pennsylvania Grade oil is raised to $3.75 and $3.85 per barrel.

Gasoline at the filling stations in Tulsa sells for 22 cents per gallon, including a 2½-cent tax.

CLOYD A. HALE, superintendent of the Canadian Oil Companies, Ltd., plant at Petrolia, Ontario, recently delivered an address to the Lions Club at Petrolia on the oil refining industry.

* * *

E. D. COLE, warehouse clerk for the Humble Oil & Refining Company in the London, Texas, district, has been transferred to Roanoke, La., as assistant district chief clerk and warehouseman.

* * *

ROY B. JONES, recently appointed general chairman of Refinery Region No. 5, was in Washington, D. C., on business for his region for several days. He has now returned to Fort Worth, Tex.

* * *

C. D. BERRY, treasurer of the Quaker State Oil Refining Corporation, and secretary-treasurer of James B. Berry Sons' Company, Inc., and MRS. BERRY, have returned to Oil City, Pa., after several weeks at Miami Beach, Fla.

* * *

AXTELL J. BYLES, president of the American Petroleum Institute and member of the Planning and Coordination Committee, was in Washington. D. C., for a few days on business and left on a two or three-week vacation in Florida.

* * *

JOHN C. STEKETEE, drilling superintendent, and G. BIERMAN, production superintendent, both with the Astra Romana, a subsidiary company of Shell Petroleum Corporation, in Rumania, were business visitors to Houston, Tex., the past week.

* * *

RAY PARKER, JR., executive vice president of the Hartol Products Corporation, New York City, returned last week from a trip to European points.

* * *

R. M. DONALDSON, of the Standard Gasoline Company, subsidiary of the Standard Oil Company of California, described a new method for testing absorption plant gas for members of the California Natural Gasoline Association at the monthly meeting in Los Angeles.

* * *

DR. R. D. REED, chief geologist of the Texas Company of California, has been nominated to represent California on the National Research Council's Committee on Tectonics, the chairman of which is PROF. CHESTER LONGWELL, of Yale University. For several years Doctor Reed has been a member of the National Research Council's Committee on Sedimentation.

* * *

T. H. LAWSON, formerly manager of the Fort Worth, Tex., division of the Continental Oil Company's marketing department, has been given charge of three territories including Fort Worth, Ponca City, Okla., and Albuquerque, N. Mex. P. W. RIGGINS, formerly in charge of jobbing sales at Ponca City, has been transferred to Fort Worth and put in charge of that division.

* * *

ADOLPH BOISSEVAIN, New York representative of Boissevain Brothers, Amsterdam, Holland, has been elected a director of Tide Water Associated Oil Company, to succeed WILLIAM A. COULTER, who resigned. Mr. Boissevain is also a director of General Cigar Company, Inc., the Cuba Company, the Cuba Railroad Company, and the Consolidated Railroad of Cuba.

* * *

C. E. CAPERS, district chief clerk and warehouseman of the Humble Oil & Refining Company, in charge of the Hull, Texas, district office, has been transferred to New Orleans, La. BEN J. GRONER, district chief clerk and warehouseman, in charge of the New Orleans office, has been transferred to the Thompson, Texas, district. W. L. CUPIT, assistant district chief clerk and warehouseman, at Thompson, Tex., has been transferred to the Hull district as district chief clerk and warehouseman.

Mr. Stewart Takes a Higher Post

George L. Stewart, in charge of the Sarnia, Ontario, refinery of Imperial Oil, Ltd., since the latter part of 1931 and recently transferred to the executive offices of the Imperial in Toronto as assistant to L. C. McCloskey, vice president in charge of manufacturing, is a native of the Canadian West, having been born in Winnipeg, Manitoba. He attended public school there and later Manitoba College, and then went to McGill University, Montreal from which he graduated as a mechanical engineer in 1914. As a member of the faculty of applied science at McGill, he spent the next two years demonstrating and lecturing.

GEORGE L. STEWART

In 1916 Mr. Stewart became a member of the engineering staff of the Imperial Oil refinery in Sarnia, Ontario. Promotion came in 1918, when he went to the company's Halifax, Nova Scotia, refinery as mechanical superintendent. The following year he was transferred to the manufacturing department in Toronto, at that time under the direction of C. O. Stillman, vice president in charge of manufacturing. In 1922 he was appointed assistant superintendent of the refinery in Regina, Saskatchewan. After a year in Regina he returned to the scene of his earlier labors, the refinery in Sarnia, Ontario, where he served as assistant superintendent until September, 1931, at which time he was appointed superintendent.

O. D. CRITES, in the crude oil department of the Shell Petroleum Corporation, Houston, Tex., was a business visitor in Dallas, Tex., over the week-end.

* * *

L. E. ADLER, telephone engineer for the Magnolia Pipe Line Company, Dallas, Tex., has just returned from a business trip to California, completing a telephone and transmission installation for the city of Los Angeles water and power department.

* * *

E. H. KIFER, former vice president and general manager of the Muskegon (Mich.) Gas Company, now a member of the State Planning Board of Texas, went to Washington, D. C., last week to confer with administration officials on a federal loan to build a proposed natural gas pipe line from Texas to Detroit, Mich.

* * *

J. J. DAVIDSON, district superintendent of the Humble Oil & Refining Company, in charge of the West Columbia and Damon districts, Texas, has been transferred to the Tomball district. TERRY G. ROACH, district superintendent, in charge of the Thompson district, Texas, has been placed in charge of the West Columbia and Damon districts, in addition to his present duties.

* * *

JOHN R. SUMAN, of the Humble Oil & Refining Company, Houston, Tex.; JOHN MORGAN, with the Sun Oil Company, Dallas, Tex.; B. B. COLLINS and O. D. CRITES, both in the crude oil department of the Shell Petroleum Corporation, Houston, and B. S. SORELLE, division manager for the Pure Oil Company, Fort Worth, Tex., made a trip to Santa Fe, N. Mex., on business for their respective companies.

* * *

EARL C. SMITH, chief metallurgist of Republic Steel Corporation, Youngstown, Ohio, was selected to deliver the 1935 Howe memorial lecture to be presented at the 144th regular meeting of the American Institute of Mining and Metallurgical Engineers, Engineering Societies Building. Mr. Smith's subject was, "Some Studies of Problems in Steel Melting." Mr. Smith took his graduate work in metallurgy at Columbia while DOCTOR HOWE was still an active influence at the institution.

CHARLES L. SUHR, president of the Pennzoil Company, Oil City, Pa., is vacationing at Phoenix, Ariz.

* * *

HENRY M. DAWES, of the Pure Oil Company, stopped over in Washington, D. C., for a few days on business, after which he left on a two-week vacation in Bermuda.

* * *

WALTER C. TEAGLE, president of the Standard Oil Company of New Jersey, was in Washington, D. C., for a few days attending meetings of the Planning and Coordination Committee.

* * *

L. L. FOLEY, chairman, Mid-Continent Section of the American Institute of Mining Engineers, Tulsa, is in New York attending the annual meeting of the institute as delegate for this section.

* * *

GEORGE L. NYE, petroleum engineer for the Tide Water Oil Company, with headquarters in the East Texas district, was a business visitor to the company's offices at Houston, Tex., the past week.

* * *

J. V. MAGEE, assistant sales manager, Chicago office of DuPont de Nemours & Company, Inc., handling petroleum industry sales, is making a trip over the Mid-Continent oil fields and was in Tulsa last week.

* * *

OLIVER WHITING, mill representative for the South Chester Tube Company, who has been spending the past three years in the East Texas Field, is convalescing from a bad attack of influenza at Sweetwater, Tex.

* * *

K. A. KOVELL, of the engineering department, and GEORGE WALDREN, of the accounting department of the Pure Oil Company, both stationed at Chicago, recently spent several days visiting Porter Township and other oil fields of Central Michigan.

* * *

DR. WILLIAM P. EDMUNDS, who has served the Standard Oil Company of Ohio as physician for the past five years, has been appointed director of industrial relations for the company by W. T. HOLLIDAY, president. Doctor Edmunds was a former University of Michigan football star.

* * *

J. A. CUMMIN, Tulsa, manager in the Mid-Continent area, and C. E. MANGOLD, Shreveport, representative in the Louisiana district, both with Dowell Incorporated, were business visitors in Fort Worth, Tex., during the week. RAY AUSTIN is in charge of the Fort Worth district for the company.

* * *

LAMAR JONES, formerly in charge of the Pampa, Texas, district, of the Humble Oil & Refining Company, has been transferred to the Houston, Tex., office of the petroleum engineering department. W. F. DEAN, in charge of drilling operations, in the Pampa district, has been promoted to superintendent.

* * *

ROBERT SERGESON, metallurgist, Republic Steel Corporation, Massillon, Ohio, addressed a meeting of the New York Chapter of the American Society for Metals, February 18, on the subject, "Impact Properties of Metals at Low Temperatures." Mr. Sergeson's address was based upon data obtained during his extensive experience in the metallurgical laboratories of Republic's central alloy division.

* * *

DIRECTORS and officials of the Amerada Petroleum Corporation have just completed an inspection trip through West Texas and New Mexico. Those in the party were: A. JACOBSEN, president; A. M. BLOW, vice president; DEAN MATHEY, E. B. TRACEY, R. M. YOUNGS, and HENRY W. MASTERS, directors. E. S. PORTER and H. G. OFFICER, officials of Tulsa, accompanied them on the trip as did Fort Worth, Tex., division men.

Administrator's Report on Crude Oil Stocks

WASHINGTON, D. C., Feb. 18.—Stocks of domestic and foreign crude petroleum at the close of the week ended February 9 totaled 323,044,000 bbls., according to data compiled by the Bureau of Mines, Department of the Interior, for Petroleum Administrator Harold L. Ickes. In comparison with data for the previous week, this total represents a net increase of 112,000 bbls. and comprised increases of 89,000 and 23,000 bbls., respectively, in stocks of domestic and foreign crude oil.

Current reports of the industry indicate that daily average crude production increased to about 2,560,000 bbls., an increase of about 70,000 bbls. over the average production during the week ended February 2. Daily average imports of crude oil amounted to 51,000 bbls., a decrease of 18,000 bbls. from the revised average of the previous week. The downward trend in crude runs to stills was interrupted during the week ended February 9, when the daily average was about 2,450,000 bbls., as compared with an average of 2,375,000 bbls. for the previous week. The estimated daily average balance of crude oil for the week ended February 9 was as follows (barrels): Production, 2,560,000; imports, 51,000, equals runs to stills, 2,450,000; increase in stocks, 16,000; exports, fuel and losses, 145,000.

STOCKS OF CRUDE PETROLEUM, FEBRUARY 2 AND FEBRUARY 9, 1935

(Barrels of 42 gallons)

Grade of crude oil—	Feb. 2	Feb. 9
Pennsylvania Grade ..	4,430,000	4,541,000
Other Appalachian ..	1,002,000	1,017,000
Lima-N.E. Indiana-Michigan	1,131,000	1,199,000
Illinois-S.W. Indiana..	11,427,000	11,422,000
N. Louisiana and Arkansas	9,578,000	9,587,000
West Texas and S.E. New Mexico	31,313,000	31,479,000
East Texas	30,333,000	30,232,000
Other Mid-Continent..	148,425,000	148,401,000
Gulf Coast	19,449,000	19,649,000
Rocky Mountain	27,474,000	27,509,000
California	35,215,000	34,830,000
Domestic crude	319,777,000	319,866,000
Foreign crude	3,155,000	3,178,000
Total*	322,932,000	323,044,000

*Represents approximately 98 per cent of total stocks in the United States, exclusive of producers' stocks.

Specify CURTIN CENTRIFUGES FOR QUICK, ACCURATE TESTS

Designed to meet all A.S.T.M. Standard Method D-96-30 and A.P.I. Code No. 25 requirements. Ruggedly built, simple in design and needs no special care. Gear ratio and throw of the crank designed to produce the required speed with the least effort consistent with good mechanical construction.

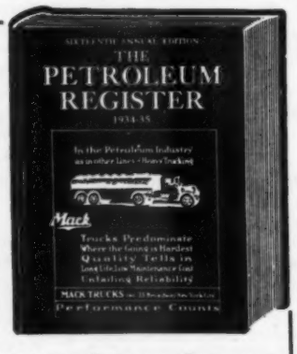
Ask for your copy of this folder carrying full details and prices. →

MANUFACTURED BY

No. 3420 W. H. CURTIN & COMPANY, INC. HOUSTON, TEXAS

Just Off the Press!

THE 16TH ANNUAL EDITION OF THE PETROLEUM REGISTER... 724 Pages with information on 23,000 oil companies.



NEW features of the Register include the Petroleum Code, a 31 page section. It is published in accordance with its latest form and there are footnotes at the bottom of each page which give all the repealed sections in their chronological order; an organization chart showing the personnel of the Planning and Coordination Committee, the chairman and members of the various sub-committees, the regional chairman, etc. and their affiliations; a list of 600 refineries arranged by states, showing location, type, capacity and the names of the superintendents; the names of 1,500 tank vessels showing owner, registered tonnage, speed, etc.; a list of exporters and marine transportation and lighterage companies.

The customary departments have been considerably enlarged. The Buyers' Guide consists of 132 pages listing the name and products of more than 1,600 equipment manufacturers. There are 45 pages listing 600 refining companies; the names of 7,000 crude oil producers; 12,000 marketers and jobbers of petroleum products arranged by states; 400 compounders and grease manufacturers; 400 natural gasoline manufacturers; 100 pipe line companies, and 2,000 foreign oil companies arranged by countries. Detailed information is given, such as officers, capitalization, subsidiaries, properties, purchasing agents, chief engineers, etc.

Also included is a list of 3,000 trade and brand names and a Petroleum Personnel Section containing the names of 4,000 oil company executives; a complete list of natural gasoline plants arranged by states, giving location, type, capacity; a comprehensive Statistical Section of 55 pages containing a wide variety of data on production, consumption, imports, exports, gasoline taxes and prices, etc.

Price, $10.00 postpaid

Send your order with payment to

THE OIL AND GAS JOURNAL, TULSA, OKLA.

Kansas Wildcats

(Continued from Page 97)

N and W of C Sec. 26-17-9w.
Set 12-in. pipe 101 ft.; drlg. 1,800 ft.
Pryor & Lockhart's No. 1 Gregory, SE SE SE Sec. 19-16-8w.
Rigging up

HARVEY COUNTY

O. J. Connell et al's No. 1 Roth, SW cor. Sec. 16-22-2w.
Spudded and S.D.
Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-2w.
T.D. 587 ft.; S.D. for csg.

KINGMAN COUNTY

Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w.
Drlg. 3,840 ft.

McPHERSON COUNTY

Brosius et al's No. 1 Hanson, NE NE SW Sec. 15-17-2w
Building rig.
Lario O. & G. Co.'s No. 1 Base, SW cor. Sec. 22-20-2w.
H.F.W. 3,067 ft.; drlg. ahead.
Palmer Oil Corp.'s No. 1 Swenson, NE NE SW Sec. 11-18-3w.
Rigging up.
L. W. Prunty et al's No. 1 Davis, NE cor. Sec. 6-22-1w.
Chat 2,922 ft.; drlg. 2,928 ft.
Stafford et al's No. 1 Krehbiel, NW NW SE Sec. 27-21-3w; (O.W.D.D.).
C.O. at 2,080 ft.

NESS COUNTY

Texas Co. and Gypsy Oil Co.'s No. 1 Goodman, C SW SW Sec. 21-19-23w.
Viola 4,550 ft.; H.F.W. 4,560-65 ft.; T.D. 4,589 ft.; U.R. 5-in. csg.

PRATT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Prentice, C SE NW Sec. 18-28-14w.
Siliceous lime 4,775-98 ft.; H.F.W.; abd.

RENO COUNTY

Bradley's No. 1 Olmsted, SW SW SW Sec. 22-22-7w.
Moving in material.
Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
T.D. 1,285 ft.; S.D.
Kessler, Their and Skelly's No. 1 Bigger, NE SE SW Sec. 29-23-6w.
Chat 3,647 ft.; drlg. 3,845 ft.
Privett Drlg. Co.'s No. 1 Crotts, NE NW NE Sec. 27-26-10w.
T.D. 3,489 ft.; U.R. 8-in. csg.

RICE COUNTY

Allison & Fitzwilliams et al's No. 1 Stumps, NW NW SW Sec. 4-18-10w.
12-in csg. 1,460 ft.; T.D.
Day's No. 1 Mason, NW NE NE Sec. 28-21-7w.
Moving in material.
Foraker, Nickerson et al's No. 1 Lyons, SE NW Sec. 27-20-8w.
H.F.W. 2,335-40 ft.; U.R. 10-in. csg.
Gypsy Oil Co.'s No. 1 Kessling, NW NW SW Sec. 10-20-9w.
9-in. pipe 217 ft.; drlg. 1,210 ft.
Johnson & Carey et al's No. 1 Dyck, SE NE SE Sec. 35-22-5w.
Wilcox 3,963-85 ft.; set 6-in. 3,963 ft.; core 3,966-85 ft. saturated.
Lario O. & G. Co. et al's No. 1 Schreg, NW SE SW Sec. 22-19-4w.
T.D. 3,475 ft.; U.R. 6-in. csg.
Marathon Oil Co.'s No. 1 Grove, SE NE NW Sec. 29-19-9w.
Location.
Vickers Pet. Co. et al's No. 1 Gouldner, SE NE NW Sec. 16-18-9w.
Rigging up.
Yingling et al's No. 1 Maupin, NW SW SW Sec. 1-18-8w.
Viola 3,233-39 ft.; pumped 194 bbls. oil, 2 bbls. wtr. in 24 hrs.; acidized and pumped 60 bbls. oil with show wtr.; Siliceous lime 3,348-54 ft.; H.F.W.; abd.

ROOKS COUNTY

Carman & Hershey's No. 1 Nelson, NW NW NE Sec. 27-10-16w.
Building rig.
Stearns & Streeter's No. 1 Meyers, NE NW NW Sec. 34-9-16w.
H.F.W 3,199 ft.; will P.B.

RUSH COUNTY

Lario O. & G. Co. and Phillips Pet. Co.'s No. 1 Benbow, NW NE NE Sec. 12-17-19w.
T.D. 3,185 ft.; fishing.

RUSSELL COUNTY

J. Brousk and R. D. Bailey's No. 1 Kluesner, NW SE Sec. 34-15-12w.
Rig.
Blair et al's No. 1 Fink, SW NW SE Sec. 16-14-14w.
Oswald 3,055 ft.; acidized at 3,154 ft. and pumped 320 bbls. oil; 6-in. 3,246 ft.; granite wash 3,318 ft.; T.D. 3,479 ft.; H.F.W.; P.B. to 3,170 ft. and C.O.
Eldorado Ref. Co.'s No. 1 Walz, SE NE NW Sec. 29-13-11w.
Set 10-in. csg. 2,090 ft. and S.D.
Hartman & Blair's No. 1 Furthemyer, NE cor. Sec. 1-14-14w.
10-in. csg. 795 ft.; drlg. 1,150 ft.
Hartman & Blair's No. 1 Garrett, SW SW NW Sec. 24-13-12w.
Moving in material.
Hartman & Blair's No. 1 Krause, NE NW NW Sec. 5-15-15w.
Drlg. 1,960 ft.
Hartman & Blair's No. 1 Sullivan, NE NE SE Sec. 2-14-15w.
6-in. csg. set 3,060 ft.; Oswald at 3,060-68 ft.; hole full of oil; no test.
Hartman & Blair's No. 1 Gurney, SE SE NW Sec. 23-14-14w.
Oswald at 2,932 ft.; 6-in. csg. 2,953 ft.; pay 3,001-06 ft.; potential production 359 bbls in 24 hrs.; completed.
Lario O. & G. Co. et al's No. 1 Nuss, NW SW SW Sec. 11-16-14w.
Location.
Lario O. & G. Co. et al's No. 1 Moore, 760 ft. S and 660 ft. E, NW cor. Sec. 34-13-12w.
10-in. 2,402 ft.; drlg. 3,005 ft.
Murphin et al's No. 1 Funk, SW cor. Sec. 19-12-13w.
Spudded and S.D.
Wolf Creek Oil Co.'s No. 1 Donovan, SW SW SE Sec. 10-15-15w.
Pay 3,195-3,200 ft.; 700 ft. oil in hole in 3 hrs.; no test.
Wolf Creek Oil Co.'s No. 1 Kraft, SW cor. Sec. 26-16-11w.
Rig.
Wolf Creek Oil Co. et al's No. 1 Penn Mutual, SW cor. Sec. 32-15-15w.
Rig.

SALINE COUNTY

Dieter et al's No. 1 Herrington, NE NW SE Sec. 3-13-1w.
Miss. lime 2,445 ft.; H.F.W. 2,500 ft.; drlg. 2,585 ft

SCOTT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Vanimam, C SE NE Sec. 15-20-33w.
6-in. liner 4,680 ft.; pay 4,670-86 ft.; acidized and pump 572 bbls. in 24 hrs.; T.D. 4,701 ft.; no increase; fishing.

SEDGWICK COUNTY

Aladdin Pet. Co. et al's No. 1 D. Lauck, SE NE NW Sec. 21-28-2.
8-in. csg. 2,627 ft.; drlg. 2,655 ft.
Allison & Fitzwilliams et al's No. 1 Struthers, NE SW Sec. 34-28-2w.
H.F.W. 3,176-87 ft.; T.D. 3,295 ft.; fishing.
Cameron, Derby Oil Co. and Trees' No. 1 Brainard, SW SE NW Sec. 19-24-2.
Spudded and S.D.
Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w.
Chat 3,682 ft.; 9-in. 3,692 ft.; standardising.
Syndicate O. & G. Co. et al's No. 1 Ratcliff, NE NW NW Sec. 30-26-2.
P.B. to 3,985 ft.; U.R. 8-in. csg.

SHAWNEE COUNTY

Jim Edwards' No. 1 Detrick, C NW NE Sec. 21-14-15.
Drlg. 560 ft.

STAFFORD COUNTY

Atlantic Oil Prod. Co.'s No. 1 Hohner, NW SE SE NE Sec. 31-23-14w,
Siliceous lime 4,075-83 ft.; running csg.
Atlantic Oil Prod. Co. and Phillips Pet. Co.'s No. 1 Guthrie, C NW NW Sec. 16-25-11w.
8-in. 3,073 ft.; drlg. 3,165 ft.

SUMNER COUNTY

T. Palmer's No. 1 Wentworth, NW NW NE Sec. 9-35-2.
Drlg. 3,050 ft.
D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW Sec. 15-35-1w.
Moving in material.

TREGO COUNTY

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w.
T.D. 1,600 ft.; fishing.
A. D. Morton's No. 1 Jones, SE cor. Sec. 20-12-23w.
Rig.

FLY BOWEN AIR LINES, INC.

5TH YEAR SERVING TEXAS

NOW— DOUBLE DAILY SERVICE

FT. WORTH— DALLAS— HOUSTON

With convenient connections to and from the North and East

FASTEST SERVICE

BROWNSVILLE—SAN ANTONIO—AUSTIN— FT. WORTH AND DALLAS

Make reservations at Transportation Desk Leading Hotels—Travel Bureaus—any Western Union or Postal Telegraph Office, or any

BOWEN AIR LINE TICKET OFFICE

Gulf Coast Wildcats

(Continued from Page 90)

S of No. 1, 50 ft. from W line of lease, Martin Verner Sur.
T.D. 5,298 ft.; cmt. back to 4,850 ft.; drilled out cmt. to 5,190 ft.; S.D.

Texas Co.'s No. 84 Hogg, 2,483 ft. N. 50 ft. W from SE cor. of lease, M. Varner Sur. Temporarily S.D. 5,342 ft.

BARBERS HILL—CHAMBERS COUNTY

Moody Corp.'s No. 1-C E. W. Barber, 302 ft. from N line and 312 ft. from E line of "B" lease, H. Griffith Sur.
Drig. shale 4,432 ft.

Humble O. & R. Co.'s No. 8-B Kirby, 200 ft. N of No. 2, 100 ft. W of E line, Henry Griffith League.
Drig. salt 2,047 ft.

Sterling O. & R. Co.'s No. 1 Gamble, 300 ft. from E line, 294 ft. from N line of Lot 78, E. Little Sur.
Rig up.

Sun Oil Co.'s No. 15 Wilburn, 405 ft. from E and 50 ft. from W line of lease, Wm. Hodges Sur.
Swabbing.

Sun Oil Co.'s No. 17 Wilburn fee, 188 ft. E of W line and 40 ft. S of N line and 120 ft. W of No. 16.
Sidetracking 986 ft.

Texas Gulf Prod. Co.'s No. 12-A Kirby, 613 ft. N of S line, 85 ft. W of E line, W of Humble O. & R. Co.'s No. 8-B Kirby.
Rigging up.

Texas Gulf Prod. Co.'s No. 3 T. S. Fitzgerald, 340 ft. S of N line and 40 ft. E of W line of lease.
Drig. salt 3,403 ft.

Texas Gulf Prod. Co.'s No. 2 Morgan Fitzgerald, 400 ft. N of S line, C of Strip No. 3.
Drig. shale and lime 4,634 ft.

Texas Co.'s No. 10 Wilburn, 475.8 ft. N. 39 deg., 10 ft. W from SW cor. of lease.
9⅝-in. csg. 4,717 ft.; T.D. 4,838 ft.

Yount Lee Oil Co.'s No. 27 Chambers Co., 400 ft. W of No. 24 and in line with Nos. 24 and 21.
7⅝-in. csg. 4,503 ft.

Yount Lee Oil Co.'s No. 28 Chambers County, 50 ft. N of S line, direct offset to Sun's No. 10 Chambers County, Wm. Bloodgood Sur.
Derrick.

BOLING—FORT BEND COUNTY

Allied Minerals, Inc.'s No. 1 J. H. Blackwell, 1,400 ft. from E line, 100 ft. from S line of 50-ac. of J. H. Blackwell 100 ac., John Huff Sur.
Coring 5,273 ft.

Midland Oil Co.'s No. 1 P. F. Coulter, 150 ft. from S line, 4,174 ft. from W line of 100-ac. tract, Miller League No. 2.
Set screen; T.D. 4,186 ft.

Allied Minerals, Inc.'s No. 1 E. C. Farmer, James Scott League, 750 ft. SE of NW line and 150 ft. SW of NE line of Gulf Prod. Co.'s E. C. Farmer 50-ac. tract.
Replugging the hole.

Irwin Larsen et al's No. 1 J. R. Farmer, 100 ft. NW and 100 ft. SW from E cor. of 125-ac. lease, James Scott Sur.
Location.

Trans-State Oil Co.'s No. 1 Dipple, E flank of dome.
10-in. csg. at 592 ft.

THOMPSON COUNTY

Humble O. & R. Co.'s No. 29-B Lockwood & Sharpe, 2,292 ft. W of E line, 376 ft. S of N line, 590 ft. E of No. 25.
T.D. 5,275 ft.; I.P. 43 bbls. per hr. through ¼-in. choke; tubing pressure 400 lbs.; csg. pressure 525 lbs.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 41 Moore, 3,372 ft. S along W line from NW cor. of James Frazier Sur., and 2,154 ft. at R/A.
Drig. sandy shale 2,351 ft.

Gulf Prod. Co.'s No. 42 Moore, 345 ft. S, 305 ft. W of SW cor. of E.M.G. Co. Sur.
Rig up.

Gulf Prod. Co.'s No. 43 Moore, 350 ft. E along S line of SW cor. of E.M.&G. Co. Sur. and 740 ft. N at R/A to said line of lease, 350 ft. E of No. 3 Moore.
Location.

SUGARLAND—FORT BEND COUNTY

Humble O. & R. Co.'s No. 12 Nelson.
T.D. 3,690 ft.; I.P. 311 bbls. in 24 hrs.; tubing pressure 380 bbls.; csg. pressure 250 lbs.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 1-A Gordon-Viterbo, 122 ft. E of W line, 326 ft. S of N line of Lot 1, Martin Dunman Sur.
Bldg. derrick.

Yount Lee Oil Co.'s No. 1 Loustalbot, 300 ft. from N line, 121 ft. from E line of Lot No. 3, offset to No. 2 Stewart, Martin Dunman Sur.

Yount Lee Oil Co.'s No. 1 F. C. Pabst, 1,186 ft. S of N line and 1,186 ft. E of W line of Lot 32, Martin Dunman Sur.
Location.

Yount Lee Oil Co.'s No. 42 Cade, N. Fitzsimmons Sur., half way between Nos. 26 and 28 and 150 ft. E at R/A.
Drig. sand and shale.

Yount Lee Oil Co.'s No. 44 Cade.
Drig. shale and lime 4,715 ft.

Yount Lee Oil Co.'s No. 2 Stewart.
Drig. shale 4,924 ft.

DICKINSON—GALVESTON COUNTY

Humble O. & R. Co.'s No. 2-A Maco Stewart, 3,324 ft. S along E line of S bank of Bayou and 566 ft. W of E line at R/A, John Sellers Sur.
Rig up.

Humble O. & R. Co.'s No. 1 Schaper, C S½ of Blk. 15, or on line between Lots 3 and 4 and center N and S. W. K. Wilson Sur.
Drig. shale 6,954 ft.

Humble O. & R. Co.'s No. 1 H. O. and W. O. Jones, 750 ft. N of N bank of Bayou and center T and W, J. O. Sherman Sur.
Drig. shale 5,600 ft.

Humble O. & R. Co.'s No. 1 A. F. Danielson, C of 20-ac. tract, Lots 5 and 6, C. A. Anderson Subd. of Lot 15, of the Righter Subd., John Sellers Sur.
Coring oil sand, showing oil and gas 8,043 ft.

ARRIOLA—HARDIN COUNTY

Houston Oil Co.'s No. 3-X fee, 2,150 ft. S of N line of lease and 150 ft. E of W line of Unit X.
Swbng. well; trying to comp. 3,239 ft.

BATSON—HARDIN COUNTY

John Deering's No. 1 Cruse.
Drig. shale 5,000 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 11-R Jordit, 300 ft. due S from No. 9-R Jordit.
Prepare to set screen; sand 1,280-1,323 ft.; T.D. 1,310 ft.; set 23 ft. of 5-in. O.D. screen; bailing.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Harkan and Langham, Dig pits.

Alpha Pet. Co.'s No. 2-A Wm. Weiss, 100 ft. W of No. 2.
T.D. 6,808 ft.; trying to open tubing.

Sun Oil Co.'s No. 2 Bernard Corp., 150 ft. from N and W lines of Lot 11, H.T.&B. Sur., Sec. 69.
Fishing 7,914 ft.

Texas Co.'s No. 317 fee, 165 ft. S of No. 262, 320 ft. E of No. 274.
Drig. shale 1,769 ft.

GOOSE CREEK—HARRIS COUNTY

Humble O. & R. Co.'s No. 80 Simms-Smith, Scott Lower League, 1,000 ft. E of the most westerly W line, and 300 ft. N of the most northerly S line.
6⅝-in. csg. at 6,254 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 38 Taylor.
Derrick.

Gulf Prod. Co.'s No. 21 Taylor.
T.D. 4,616 ft.; I.P. 250 bbls. per day through ⅝-in. choke.

Rio Bravo Oil Co.'s No. 27-A Settegast, 377 ft. S, 553 ft. W of NE cor. of Settegast "A" tract, James Hamilton Sur.
Standing 5,526 ft.

Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur.
T.D. 5,411 ft.; standing.

MYKAWA—HARRIS COUNTY

Danciger O. & R. Co.'s No. 3 Minnetex, 150 ft. from S line and 87.5 ft. from E line of Blk. 192, Wm. Lovett Sur.
12½-in. csg. 1,194 ft.; T.D. 1,194 ft.

Danciger O. & R. Co.'s No. 1 Williams, SW cor. of 29-ac. lease.
Abd.; T.D. 4,867 ft.

West Prod. Co.'s No. 1 Medelsohm & Ryeman, Block 13, F. J. Rathos Survey.
T.D. 4,520 ft.; showing oil; sidetracked 3,350 ft.; now drig. sandy shale 4,329 ft.

TOMBALL—HARRIS COUNTY

Amerada-Stanolind O. & G. Co.'s No. 2 Bode, 500 ft. from N line and 500 ft. from W line of 40-ac. lease, J. M. Hooper Sur.
Location.

Humble O. & R. Co. et al's No. 3 Rudel, 1,750 ft. N of S line, 185 ft. E of W line of 90-ac. tract, J. House Sur.
Location.

Humble O. & R. Co.'s No. 1 Ford, 466 ft. from NE line, 363 ft. from SE line, E. Smith Sur.
Drig. shale 4,916 ft.

Humble O. & R. Co.'s No. 3 Treischel, 466 ft. from W line, 500 ft. from N line of 112-ac.
Drig. shale 3,967 ft.

Humble O. & R. Co.'s No. 2-A Weindorf, 700 ft. from N line, 317 ft. from W line, C. Goodrich Sur.
10¾-in. csg. at 911 ft.

Humble O. & R. Co.'s No. 3 Martens, 1,908 ft. from S line, 1,268 ft. from E line of survey, Wm. Heard Sur.
Rig up.

Humble O. & R. Co.'s No. 7-B Quilter.
Drig. shale 5,023 ft.

Humble O. & R. Co.'s No. 1 Hilligeist, 466 ft. N of S line, 502 ft. W of E line.
T.D. 5,592 ft.; set csg. 5,554 ft.; I.P. 468 bbls. per day through ¼-in. choke; tubing pressure 475 lbs.; csg. pressure 800 lbs.

Humble Oil & Ref. Co.'s No. 3-A Schultz, 435 ft. E of WL, 700 ft. N of SL, C Goodrich Survey.
7-in. csg. 5,567 ft.; drlg. 5,572 ft.

Humble O. & R. Co.'s No. 1 Melo, 525 ft. S of N line, 584 ft. E of W line of 240 acres, C. N. Pillot Sur.
7-in. csg. 5,541 ft.; waiting on cmt. to set.

Humble O. & R. Co.'s No. 7 Reid, 633 ft. from W line, 1,350 ft. from S line, C. Goodrich Sur.
T.D. 5,565 ft.; I.P. 482 bbls. per day through ¼-in. choke; tubing pressure 850 lbs.

Texas Co.'s No. 3 R. W. Hirsch, 510 ft. W of E line and 466 ft. N of S line of lease.
Coring sand 5,429 ft.

KITTRELL—HOUSTON AND WALKER COUNTIES

Humble O. & R. Co.'s No. 6 E. T. Shaw, 330 ft. from NW line, 990 ft. from SW line of lease, Charles McEllis Sur.
Location.

Humble O. & R. Co.'s No. 7 Shaw, 660 ft. NW of No. 5 and 330 ft. from SW line of lease, Charles McEllis Sur.
Drig. shale and sand 1,852 ft.

Kellough & Tucker No. 1 L. W. Huffman, 10 ft. SW, 10 ft. NW of most southerly corner of Humble Oil & Ref. Co.'s lease, Charles McEllis Survey.
Drig. shale 633 ft.

Sunoil Co.'s No. 1 Huffman Charles McAbd. 2,155 ft.

VANDERBILT—JACKSON COUNTY

Imperator Oil Co.'s No. 1 Dutton, S C of Lot No. 11, Blk. 25, 450 ft. S of R.R. and 1,350 ft. W line of townsite, Ray Musquiz Sur.
Rigged up and S.D.

Turman Oil Co.'s No. 1 T. H. Miller, 150 ft. each way out of E 50 ac. of Miller 160-ac. tract in Ray Musquiz Sur.
Rigging up.

BIG HILL—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 1-A Pipkin, 2,640 ft. S and 2,050 ft. W of NE cor. of survey.
T.D. 6,319 ft.; in sand showing lots of gas; trying to get bottom of hole.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 16 Thomas, 650 ft. N of S line, 165 ft. W of E line of W. H. Smith League.
Drig. sand 281 ft.

CLEVELAND—LIBERTY COUNTY

Black Gold Pet. Oil Corp.'s No. 2 R. D. McDonald, 466 ft. W of most westerly E line and 466 ft. N of most northerly S line of survey, 923 ft. W of Gulf Prod. Co.'s No. 7-C Kirby Lbr. Co., T. Devers Sur.
Moving in rig.

William J. Colegrove et al's No. 1 State School Land & Dev. Co., 446 ft. from W line and 170 ft. from S line of survey, Clayton Rooper Sur.
Location.

Gulf Prod. Co.'s No. 8-C Kirby, 933 ft. due E of No. 1 Kirby.
Coring sand and shale 5,363 ft.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 15 Moores Bluff, midway between No. 10 and No. 12 Moores Bluff.
T.D. 4,088 ft.; comp. as gas well; 13/64-in. choke; 1,575 lbs. pressure.

General Crude Oil Co.'s No. 1 W. D. Kay Malcolm Duncan Sur., 1,537 ft. along N Drill pipe stuck at 6,100 ft.

General Crude Oil Co.'s No. 10 Davis, 2,000 ft. from E line, 660 ft. from S line of D. Kokernut Sur.
Rig up.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 4 Crow & Jacobs, 150 ft. E, 420 ft. N of SW corner of lease Section 21, H & T C Survey.
Drig. sand 4,293 ft.

Gulf Prod. Co.'s No. 1 Hankomer, 350 ft. W, 420 ft. N of SE corner of George Stingier Survey.
Location.

HULL—LIBERTY COUNTY

G. R. Brown and S. F. Bashara's No. 1 David Hannah, Jesse Devore league, 300 ft. S line, 150 ft. E line, 42-ac. Gulf tract.
Derrick.

Republic Prod. Co.'s No. 156 Dolbear, 178 ft. W of No. 68, 130 ft. E of No. 63, J. Devore League Sur.
Location.

Sterling O. & R. Co.'s No. 1 Taylor, 180 ft S of S line of tract, and 5,500 ft. E of E line of 5-ac. tract, J. Devore Sur.
Abd.; T.D. 4,809 ft.

Texas Co.'s No. 3 Barrow.
Swbd. dry; ran tubing; swbng. again.

BUCKEYE—MATAGORDA COUNTY

United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league 214 ft. N line and 202 ft. E line of lease.
Shut down.

CONROE—MONTGOMERY COUNTY

Humble O. & R. Co.'s No. 73 South Tex Dev. Co., 6,000 ft. E of most easterly W line, 466 ft. S of N line of Theo Slade Sur.
Drig. shale 582 ft.

Houston Oil Co.'s No. 12 Cartwright, 933 ft. E of No. 11, 933 ft. N of No. 9.
Location.

Sun Oil Co.'s No. 23 Foster, 799.5 ft. S of No. 13, 892 ft. W of No. 12, J. Brecker Sur.
Drig. shale 2,673 ft.

SPLENDORA—MONTGOMERY COUNTY

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W½ of Blk. No. 8, Walker County School Land Sur.
Derrick.

ORANGE—ORANGE COUNTY

Trio Oil Co.'s No. 1 D. S. Comer, 69 ft. W of E line and 39 ft. S of N line of 6.83-ac. tract in W. M. Dyson Sur.
Drig. shale 2,410 ft.

TOM O'CONNOR—REFUGIO COUNTY

Quintana Oil Co.'s No. 2-B O'Connor, 500 ft. from W line, 260 ft. from S line of M. L. White Sur.
Coring 8,300 ft.

Quintana Oil Co.'s No. 5 O'Connor, 3,125 ft. from S line, 466 ft. from E line of Blk. 4, Swisher Sur.
T.D. 5,846 ft.; 7-in. csg. 5,790 ft.; T.D. 5,846 ft.

Quintana Oil Co.'s No. 6-A O'Connor, J. M. Swisher Sur., Blk. 4.
Derrick.

PORT NECHES—ORANGE COUNTY

Port Neches Pet. Corp. et al's No. 1 W B Organ, 450 ft. from NE line and 150 ft from NW line of A. Schramm Sur., S of Port Neches Field.
Drig. shale 6,015 ft.

Texas Co.'s No. 3-B Polk, 200 ft. S, 450 ft W of SE cor. of Mary E. Hall Sur. No 9
T.D. 5,933 ft.; flowing by heads; C.O. tubing.

Texas Co.'s No. 10 Kuhn, 200 ft. N, 450 ft. W of SE cor of Mary E. Hall Sur. No. 9
Abd. 5,970 ft.

Texas Co.'s No. 3 Orange National Bank, 750 ft. S of N line and 295 ft. E of W line of lease, Jacob Beaumont Sur.
Derrick.

Texas Co.'s No. 4-B Polk, 750 ft. S and 1,450 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.

Texas Co.'s No. 5-B Polk, 750 ft. S and 850 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.

Texas Co.'s No. 6-B Polk, 750 ft. S and 250 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.

LIVINGSTON—POLK COUNTY

Gem Oil Co.'s No. 6 Davis & Holmes, 653 ft. from W and 662 ft. from N line of survey, A. Viesca Sur.
Rig up.

GRETA—REFUGIO COUNTY

Atlantic and Stanolind's No. 3-F O'Brien.
Drig. shale 4,945 ft.

Hewitt & Daugherty's No. 12 Lambert.
Rig up.

Humble O. & R. Co.'s No. 18 Heard, 466 ft. from N line, 1,399 ft. from W line of 500-ac. tract, J. H. Peoples Sur.
Tested 4,200 ft. of oil from 4,360-4,405 ft.; T.D. 4,405 ft.

Humble O. & R. Co.'s No. 1-C O'Connor, 210 ft. from N line, 210 ft. from S line of N. S. Crunk and M. J. Ximines Sur.
Drig. clay 200 ft.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 18 F. B. Rooke, 330 ft. E of W line, 330 ft. S from N line in 200-ac. lease.
Drig. shale 3,400 ft.

Houston Oil Co.'s No. 19 P. H. Rooke, 660 ft. N of No. 18 P. H. Rooke.
Drig. 1,090 ft.

United Gas Co.'s No. 4 Fannie Heard old well.
Repairing rig 3,465 ft.

United Gas Co.'s No. 10 Wilson Heard, runs 2,062 ft. along NE line Wilson Heard lease from S cor. of Houston Oil Co.'s F. V. W. Heard lease, 4,579 ft. to a point, thence at R/A to line 330 ft. to point of location.
Derrick.

United Gas Co.'s No. 5 Powers.
Waiting on perforator 5,220 ft.

Nutex Oil Co.'s No. 4 Zimmer, 330 ft. from NW line, 922 ft. from SW line of Manchola Sur.
T.D. 415 ft.; set csg.

McFADDIN-O'CONNOR DISTRICTS—VICTORIA AND REFUGIO COUNTIES

Sun Oil Co.'s No. 12 Janner.
Bldg. rig.

Texas Co.'s No. 9 McFaddin.
Location.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 10 H. R. Clay.
Abd. 1,886 ft.

LOUISE—WHARTON COUNTY

Pure Oil Co.'s No. 3 Charles T. Kountze, 1,980 ft. SE and 330 ft. SW of N cor. of Morris & Cumming Sur., Sec. 9.
T.D. 5,140 ft.; 7-in. csg at 5,134 ft.

Pure Oil Co.'s No. 1 John Macha, 318 ft. from NW line and from SE line of F. Walnut Sur., and 467 ft. from NE line of 101.53-ac. lease, M.&C. Sur. No. 25.
Location.

Pure Oil Co.'s No. 1 G. Wharton Est., 1,497 ft. from SW line and 318 ft. from SE line of F. Walnut Sur., Abst. A-35.
Sidetracked 5,109 ft.

Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres.
Sidetracked 5,109 ft.

Pure Oil Co.'s No. 3 Stewart, 1,000 ft. SW and 318.25 ft. SE from N cor. of W. L. Stewart's 160-ac. tract, Morris and Cummings Sur. No. 25.
Location.

Pure Oil Co.'s No. 4 Stewart, 485 ft. SW, 330 ft. NW of E cor. of W. L. Stewart's 160-ac. tract, Morris and Cummings Sur. No. 25.
Location.

BAY ST. ELANE—TERREBONNE PARISH

Texas Co.'s No. 9 Bay St. Elane.
Drig. shale 6,964 ft.

CALLIOU ISLAND—TERREBONNE PARISH

Texas Co.'s No. 17 Calliou Island, Sec. 20-23-23.
Rig up.

Texas Co.'s No. 18 Calliou Island.
Drig. shale 2,670 ft.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 2 State.
T.D. 4,311 ft.; prepare to test.

Shell Pet. Corp.'s No. 3 State.
T.D. 6,499 ft.; running tubing.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Standard Oil Co. of Kansas' No. 1 Mouton, 1,480 ft. E, 250 ft. S of NW cor. of SW¼ Sec. 34-8s-3e.
Coring shale 7,926 ft.

Superior Oil Prod. Co.'s No. 4 Comeaux, 1,420 ft. S, 2 deg. W, 350 ft. S, 89 deg. E out of NW cor. NE¼ Sec. 34.
13⅜-in. csg. 1,233 ft.; drlg. shale 1,600 ft.

Superior Oil Prod. Co.'s No. 2 Johnson, 1,128 ft. N, 673 ft. E from SW cor. of NE¼ Sec. 34.
Derrick.

Superior Oil Prod. Co.'s No. 1 Coralie Domingue, 3,998 ft. S, 767 ft. W of NE cor. Sec. 34-8s-3e.
Coring sand 7,761 ft.

Superior Oil Prod. Co.'s No. 4 Hermandez, 450 ft. E and 330 ft. S of NW cor. of lease, Sec. 34-8s-3e.
Drig. shale 8,651 ft.

Superior Oil Prod. Co.'s No. 7 Larcade, 1,467 ft. E, 190 ft. N of SW cor. N½ NW Sec. 35-8s-3e.
Drig. shale 7,072 ft.

Superior Oil Prod. Co.'s No. 1 Moise LaVergne, 269.7 ft. W and 98 ft. N of SE cor. of Sec. 28-8s-3e.
T.D. 5,970 ft.; P.B. 5,675 ft.; set whipstock.

Superior Oil Prod. Co.'s No. 1 A. Allemond, 350 ft. S, 20 deg. S, 53 min. W, and 530 ft. N, 88 deg., 58 min. W of NE cor. of 37.12-ac. tract, Sec. 33-8s-3e.
7-in. csg. 8,617 ft.; T.D. 8,637 ft.; drlg. plug.

Superior Oil Prod. Co.'s No. 3 M. Kahn, from SE cor. 2,563 N, 20 deg., 53 min. E, and 1,000 ft. N, 89 deg., 23 min. W of Sec. 33-8s-3e.
Running tubing 8,733 ft.

Superior Oil Prod. Co.'s No. 1 C. B. Hermandez, 2,791.6 ft. S, 330 ft. W of NE cor. of NW¼ Sec. 34-8s-3e.
Drig. shale and sand 7,977 ft.

EDGERLY—CALCASIEU PARISH

Emerson Oil Co.'s No. 1 Bright-Penn.
Drig. shale 3,650 ft.

Union Sulphur Oil Co.'s No. 3 Hunter, 1,-160 ft. N and 320 ft. E of SW cor. SE Sec. 21-9s-11w.
Abd. 3,444 ft. in rock.

CAMERON MEADOWS—CAMERON PAR.

Burton-Sutton's No. 1 School Land.
Cmtd. csg.; T.D. 4,969 ft.
Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 ft. N of SE cor. of Sec. 16-4s12w.
Derrick.
Magnolia Pet. Co.'s No. 10 Cameron Meadows, 500 ft. S of No. 9.
Rig up.
Texas Co.'s No. 1 Miami Corp.
Drlg. sandy shale 5,714 ft.

CHOCTAW DOME—IBERVILLE PARISH

Standard Oil Co.'s No. 5 Gay, 2,450 ft. S and 425 ft. E of NW cor. of NE Sec. 32-8s-11e.
Drlg. shale 1,116 ft.

DOG LAKE—TERREBONNE PARISH

Texas Co.'s No. 11 State, 150 ft. N and 2,474 ft. W, SE cor. Sec. 31-21s-16e.
Derrick.

GARDEN ISLAND BAY—TERREBONNE PARISH

Texas Co.'s No. 13 State, 3,391 ft. S and 1,-504 ft. W of NE cor. Sec. 107-33-32.
Rig up.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6, Alliance Trust, 667 ft. E. 1,787 ft. S line of lease, Sec. 34-11s-1w.
Sidetracked at 6,910 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 4 Hansen, 1,680 ft. W and 780 ft. N of SE cor. Sec. 11-12s-10w.
Drlg. shale 6,033 ft.
Calcasieu Oil Co.'s No. 3 H. C. Hansen, 150 ft. S and 150 ft. E of NW cor. of lease. Sec. 13-12s-10w.
Cmtd. csg.; T.D. 4,974 ft.
Gulf Prod. Co.'s No. 14-B State, 610 ft. S, 1,866 ft. E of NE cor. Sec. 13-12s-10w.
Location.
Sutton Oil Co.'s No. 1 Ellender, 616 ft. S and 50 ft. E of NW cor. SW¼ SE¼ Sec. 22-12s-10w.
Location.
Sutton Oil Co.'s No. 2 Portier, 717 ft. S and 50 ft. W of NW cor. SW¼ SE¼ Sec. 22-12s-10w.
Location.
Texas Co.'s No. 14 State, 500 ft. SE of No. 13, Sec. 13-12s-10w.
Derrick.
Union Sulphur Co.'s No. 3 Hanzen.
Drlg. shale and lime 5,133 ft.
Union Sulphur Co.'s No. 4 Hanzen.
Drlg. hard shale 6,302 ft.
Yount Lee Oil Co.'s No. 1-A Gulf Land, 2,000 ft. S and 50 ft. E of the NW cor of Sec. 22-12-10.
Rig up.
Yount Lee Oil Co.'s No. 12 Gulf Land, 1,625 ft. S and 350 ft. W of NE cor. of NW of Sec. 14-12s-10w.
Drlg. sandy shale 5,591 ft.
Yount Lee Oil Co.'s No. 15 School land, 1,-160 ft. S, 715 ft. W of NE¼ of SW cor. Sec. 16-12s-10w.
T.D. 4,539 ft.

NEW IBERIA—IBERIA PARISH

Harrison & Abercrombie's No. 3 Schwing, 500 ft. N and 50 ft. E of No. 2, Sec. 24-12s-5w.
Drlg. shale 4,865 ft.
Iberia Oil Corp. and Y. D. Spell's No. 2 Bernard, 150 ft. E of No. 1, Sec. 54-12s-7e.
Drlg. gumbo 2,825 ft.
Iberia Oil Co. and Y. D. Spell's No. 3 Bernard, 300 ft. N of No. 2, Sec. 54-12s-7e.
Rig up.
Texas Co.'s No. 1 Hanzen, NE along NW line of lease 508 ft., thence 150 ft. E at R/A, Sec. 54-12s-7e.
Drlg. wtr. sand 6,765 ft.

IOWA—CALCASIEU AND JEFF DAVIS

Shell Pet. Corp.'s No. 1 Johnston.
Drlg. sand 4,360 ft.
Shell Pet. Corp.'s No. 13 Hyde, 990 ft. S, 330 ft. E of NW cor. NE Sec. 13-9s-7w.
Coring sand 6,148 ft.
Shell Pet. Corp.'s No. 6 Stafford, 1,650 ft. from S line, 330 ft. W of NE cor. of lease, Sec. 18-9s-6w.
Drlg. shale 5,552 ft.
Shell Pet. Corp.'s No. 14 Heyd, 330 ft. N, 1,819 ft. W of SE cor. of NE¼ Sec. 13.
Drlg. shale 3,478 ft.

JENNINGS—ACADIA PARISH

Simon-Tolson and Gardner's No. 1, 1,020 ft. due E and 250 ft. due W of SE cor. Sec. 46-2s-2w.
Fishing 1,870 ft.
Yount Lee Oil Co.'s No. 14 Housierre-Latrielle, 260 ft. N of No. 13, Sec. 47-2s-2w.
D.S. stuck 7,812 ft.
Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, 5,435 ft. due E, 1,970 ft. due N of SW cor. of section.
D.S. stuck 7,304 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 31 Lake Barre.
Drlg. annydrite 3,687 ft.
Texas Co.'s No. 14 Lake Barre.
Drlg. shale 2,527 ft.
Texas Co.'s No. 15 Lake Barre.
Drlg. shale 1,064 ft.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 12 Lake Pelto.
Drlg. sand 6,402 ft.
Whitstone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E of NW cor. SW SW Sec. 35-19s-16e.
T.D. 3,390 ft.; P.B. to 3,052 ft.; S.D.

LAKE WASHINGTON—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 23 Cockrell-Moran, 650 ft. N and 21 deg. 30 min. E of No. 3 in Twp. 20s-26e.
Coring shale 4,649 ft.

LEESVILLE—LAFOURCHE PARISH

Gulf Prod. Co.'s No. 3 Bernard.
T.D. 3,881 ft.; I.P. 489 bbls. per day; ¾-in. choke.
Gulf Prod. Co.'s No. 5 Bernard.
T.D. 3,50 7ft.; set whipstock 3,569 ft.
Gulf Prod. Co.'s No. 10 Bernard, 1,333 ft. E. 958 ft. S of NW cor. Sec. 24-21s-23e.
Derrick.
Emerald Pet. Co.'s No. 10 State, west bank, 300 ft. S of well No. 1.
Location.
Emerald Pet. Co.'s No. 11 State, east bank, 227 ft. N of well No. 1.
Location.
Emerald Pet. Co.'s No. 12 State, east bank, 250 ft. S of well No. 1.
Location.
Leesville Oil & Gas Co.'s No. 1 Southern Louisiana Canal Navigation Co., 35 ft. W of Bank of Bayou, 15 ft. N of S bank, Sec. 26-21s-22e.
S.D. 4,420 ft.
Lincoln Oil Co.'s No. 5 State.
Location.
Texas Co.'s No. 31 Leesville.
Drlg. sand and shale 3,085 ft.
Texas Co.'s No. 33 Leesville.
Rig up.
Texas Co.'s No. 27 Leesville.
Bldg. derrick.
Texas Co.'s No. 30 Leesville, 1,075 ft. S, 310 ft. E, NW cor. Lot 6. Sec. 26-21s-23w.
Drlg. sand and boulders 3,445 ft.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 12 Bordages, 966 ft. W and 93 ft. N of SE cor. N½ NE Sec. 8-16s-19w.
Abd. 7,800 ft.
Magnolia Pet. Co.'s No. 5-A Farquar (W.O.).
Washing 6,482 ft.
Magnolia Pet. Co.'s No. 8 Farquar (W.O.).
Cutting and pulling liner 6,716 ft.
Union Sulphur Co.'s No. 1 Moss (W.O.).
T.D. 6,607 ft.; cmtd. 4¼-in. csg.

FORT BARRE—ST. LANDRY PARISH

Gulf Prod. Co.'s No. 11 Wilson Cochran, 1,-500 ft. S, 9 deg., 6 min. W from most southerly NE cor. of Texas Co.'s Botnay Bay lease, Sec. 4-6s-5e.
Location.
Gulf Ref. Co.'s No. 10 Wilson Cochran, 1,-200 ft. S of most southerly NE cor. of Texas Co.'s Botany Bay lease, 600 ft. E at R/A to line lease, Sec. 4-6s-5e.
T.D. 3,260 ft.; I.P. 408 bbls. per day; ¾-in. choke.

ROANOKE—JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Kratzer, 440 ft. from W line, 440 ft. from S line of 120-ac. tract, Sec. 11-4w-9s.
Drlg. hard lime 3,190 ft.
Humble O. & R. Co.'s No. 1 Clayton, 2,080 ft. S and 440 ft. W, NE cor. Sec. 10-9s-4w.
Rig up.
Humble O. & R. Co.'s No. 1 R. C. Jarnagan, 440 ft. S. 440 ft. E of the NW cor. SE Sec. 12-9s-4w.
Abd. 9,870 ft.
Humble O. & R. Co.'s No. 3 Devilbiss, 1,399 ft. W, 466 ft. S of NE cor. Sec. 14-9s-4w.
Swbd. 90% S.W.; 9,230 ft.; pulled screen and liner.
Shell Pet. Corp.'s No. 1 Jarnigan, 330 ft. E, 660 ft. S. NW cor. Sec. 12-9s-4w.
D.S. stuck; T.D. 10,001 ft.
Shell Pet. Corp.'s No. 1 Carter, 660 ft. N and 330 ft. W of SE cor. NW Sec. 1-9s-4w.
Coring sandy shale 3,011 ft.
Shell Pet. Corp.'s No. 2 Kratzer, 440 ft. N and 440 ft. E of SW cor. NW Sec. 12-9s-4w.
T.D. 7,802 ft.

STARKS—CALCASIEU PARISH

Gulf Prod. Co.'s No. 32 Lutcher Moore, Sec. 19-9s-8w.
Drlg. sand, shale and lime 3,240 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee Oil Co., 800 ft. S of No. 11, in line with Nos. 9 and 11, Sec. 12-13s-3w.
Reaming 8,129 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 807 fee.
Drlg. sticky shale 1,231 ft.
Union Sulphur Co.'s No. 2 Noble, E of No. 1
6⅝-in. csg. 5,137 ft.; T.D. 5,146 ft.; I.P. 300 bbls. per day through ¼-in. choke.
Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of C Sec. 29-9s-10w.
Waiting on cmt. to set 5,691 ft.

VINTON—CALCASIEU PARISH

Vinton Pet. Co.'s No. 12 Gray, 605 ft. N and 374 ft. W of SE cor. Sec. 33-10s-12w.
D.S. stuck 1,991 ft.
Wilson Broach's No. 9 Wilson.
Cmtd. csg. 3,596 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 1 White Castle Shingle Co., 1,320 ft. W, 100 ft. S from NE cor. of lease.
T.D. 4,552 ft.; waiting on orders.
Shell Pet. Corp.'s No. 1 Adams, 2,340 ft. N, 100 ft. E of SW cor. of lease.
Location.

MISCELLANEOUS WILDCATS

TEXAS

BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 1 Houston Farm Dev. Co., 1,414 ft. N, 316 ft. W of SE cor. of L. Bacheider Sur.
Ran 302 ft. of 7-in. liner; D.S. stuck; prepare to wash over fish; T.D. 6,992 ft.; sand.
George Strake's No. 2 Truska, 991 ft. W of No. 1, H.T.&B. Sur., Sec. 7.
Drlg. shale 3,750 ft.
Holt et al's No. 1 Griffith, J. B. Bailey Sur.
T.D. 4,200 ft.; waiting orders.
Luling O. & G. Co.'s No. 1 Jameson, 600 ft. W of E line, 750 ft. S of N line of N. E. Roberts Sur.
S.D. 3,500 ft.; S.W. sand.
Showers & Moncrief's No. 1 Hughey, 5,500 ft. NW of discovery well, in center of Lot 18, H.T.&B. Sur., Sec. 29, Abst. 393.
Location.

CALHOUN COUNTY

Steinberger Pet. Co.'s No. 1 W. A. Shofner, 330 ft. from S and E lines of 100-ac. tract in M. Sanches Sur.
Prepare to spud.

CHAMBERS COUNTY

Humble O. & R. Co.'s No. 1 Middleton, 466 ft. each way out of the SW cor. of survey. Drlg. shale 6,984 ft.
Sun Oil Co.'s No. 1 Hamilton, 1,400 ft. from N line, 1,400 ft. from W line of survey, T.&N.O. Sur., Sec. 128.
Coring wtr. sand 8,410 ft.

COLORADO COUNTY

Danciger O. & R. Co. and L. E. Hults's No. 1 C. L. Raver, 990 ft. N and E of SW cor. 477 acres, Sec. 1, B.B.B.&C. Sur.
Abd. 6,337 ft.
George White et al's No. 1 M. M. Cravins, 1,000 ft. from N, 300 ft. W of SW cor. of survey, B.B.B.&C. Sur. No. 8.
Rig up.

FORT BEND COUNTY

W. A. Shafer et al's No. 1 V. B. Bertash, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur.
S.D. 2,900 ft.
Turnbull & Irwin's No. 1 Herman Hospital, 100 ft. W of E line, 350 ft. N of SL of 446-ac. tract, J. H. Cartwright Sur.
Moving in.

GALVESTON COUNTY

Gillock Pet. Co.'s No. 2 Maco Stewart, 900 ft. N and 150 ft. W of No. 1, Alex Farmer Sur.
T.D. 1,500 ft.; waiting on surface pipe; S.D.
Texana Gulf Oil Corp.'s No. 1 Thomas Shaw (200 acres), 150 ft. NW line, 105 ft. NE line, Lot 66, Sec. 7, Hall & Jones, Galveston Island.
S.D. 6,512 ft.

GRIMES COUNTY

Hubert Holt et al's No. 1 Simon Fuqua, 1,200 ft. N of S line and 400 ft. W of E line of 177-ac. lease and survey, Moses Evans Sur.
S.D. 3,080 ft.
Dr. Marshall et al's No. 1-B Todd, 300 ft. from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
S.D. 2,005 ft.
Roan et al's No. 1 S. W. Sealy, 3,474 ft. N of S line and 850 ft. E of W line of survey, B. F. Smith Sur., 2 miles SW of Kellum Springs.
S.D. 2,650 ft.

HARRIS COUNTY

Cockburn Oil Co. and Frazier's No. 1 Herman Hospital, 910 ft. N, 300 ft. W of SE cor. of tract.
12½-in. csg. 723 ft.; T.D. 900 ft.
Esco Oil Co.'s No. 1 E. P. Seureau, 3,333 ft. from W line and 2,215 ft. from S line of 350-ac. tract, W. P. Harris Sur.. Abst. A-30.
S.D. 6,023 ft.
T. S. F. Oil Co.'s No. 1 J. B. Hine, Arthur McCormick Sur., Abst. 46.
No report.
C. C. Foster et al's No. 1 H. K. Johnson, 2,900 ft. from S line and C of E and W lines of G.C.&S.F. Sur.
Drilled 25 ft. and S.D.
Means and McGehee, Inc.'s No. 1 Laura Lackner, 9,857 ft. W and 2,803 ft. N, of H. Rinerman Sur.
Drlg. shale 7,307 ft.
Means & McGehee's No. 1 Herbert Neuhaus, 400 ft. from S and E lines of 154.55-ac. tract. Wm. P. Morton Sur.
Drlg. shale 4,816 ft.
Hill & Hill's No. 1 Wharton, 466 ft. from NW cor. Sec. 5, W.C.R.R. Sur.
Rig up.
W. U. Paul's No. 2 House, 100 ft N of No. 1, M. Magruder Sur.
Drlg. shale 1,515 ft.

HOUSTON COUNTY

Adams et al's No. 1 Sanders, 330 ft. from S line, 330 ft. from W line of 55-ac. tract of lease, J. Thomas Sur.
Coring sandy lime 2,000 ft.
Sterling O. & R. Co.'s No. 1 Bruton, 8,850 ft. from E line and 5,000 ft. from S line of survey, Barton Clark Sur.
Derrick.

JACKSON COUNTY

A. M. Harris' No. 1 Whitley, 800 ft. out of SE cor. of F. G. Keller Sur.
Location.
Shell Pet. Corp.'s No. 1 W. W. McCrary, 460 ft. out of SE cor. of 50-ac. tract, A. Kountze Sur.
Location.

JASPER COUNTY

Republic Prod. Co. and Houston Oil Co.'s No. 1 Sabine Tram. Co., 330 ft. out of NW cor. Sec. 71, H.&T.C. Sur.
Rig up.

JEFFERSON COUNTY

Sun Oil Co.'s No. 1 H. Long, 1,500 ft. E line, 990 ft. E line of lease.
T.D. 9,045 ft.; P.B. to 8,402 ft.; sidetracked at 8,591 ft.
Sun Oil Co.'s No. 1 Hebert & Braussard, 6,-890 ft. NW along SW line and 660 ft. NE at right angles to SW line, B. Blackman Sur., Abst. No. 2.
Rig up.

LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4.
Rigging up.
Extension Oil Co.'s No. 1 J. A. Lovett, 280 ft. from E and 600 ft. from S line of lease. P. P. Deevers Sur.
T.D. 4,048 ft.; to install heavier rig.
Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 500 varas from N line of Samuel Strong Sur.
No report.
A. L. Maxwell's No. 1 M. P. Hincliff, 200 ft. from E line and 1,000 ft. from the N line of survey, H.&T.C. Sur., Sec. 10s.
Spudded.
Thomas et al's No. 1-A Eicke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur.
T.D. 5,047 ft.; 4½-in. csg. at 5,029 ft.

MADISON COUNTY

Madisonville Pet. Co.'s No. 1 Cannon, 660 ft. N of S line, 440 ft. E of W line of 186-ac. tract, J. V. Phillips Sur.
Location.

MATAGORDA COUNTY

Cockburn Oil Co.'s No. 6 Hawkins, 2,600 ft. from NW line, 1,200 ft. from SW line of McCarthy Sur.
T.D. 5,803 ft.; to run 8⅝-in. csg. to bottom.
Dr. Griffith's No. 1 fee, 3,000 ft. from E line and 3,000 ft. from W line of Wm. H. Bell Sur.
Rigging up and S.D.
Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 1, Blk. 8, R. Fisher Sur.
S.D. 3,500 ft.

MONTGOMERY COUNTY

Reynolds Drlg. Co. et al's No. 1 Mrs. Clara B. Stewart, 330 ft. S and E of most easterly inner cor. of 595-ac. tract, John Corner Sur.
S.D. 5,500 ft.
Walter Keeble's No. 1 Foster, 700 ft. E of W line, 2,000 ft. N of S line, Lot 37.
Cmtd. 10-in. csg. 226 ft.
Woodard-Smith-Cooper's No. 1 J. V. Scott, F. A. B. Wheeler Sur.
S.D. 5,730 ft.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-ac. tract.
S.D. 2,770 ft.

POLK COUNTY

C. & C. Drlg. Co.'s No. 1 Granbury & Smith, 600 ft. N and 600 ft. W from most western NW cor. of Gulf Prod. Co.'s Graybury & Smith lease, in the Wm. Shadburn Sur.
Drlg. shale 3,960 ft.
Howard Dailey et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 16 miles NE of Corrigan.
S.D. 60 ft.
J. F. Anderson's No. 1 E. L. Duke (O.W.D. D.), 400 ft. from E and 350 ft. from S of SW cor. of P. Michelick 50-ac. lease, Abst. 59, P. J. Mineral Sur.
Waiting on a new mud pump; T.D. 5,304 ft.
J. W. Leggett et al's No. 1 Bergman, C of 294-ac. tract, or 1,100 ft. W of H.E.&W.T. R.R., J. T. Pinkney Sur.
Digging pits.
Dick Schwab's No. 1 Lynch, 330 ft. out of NW cor. of 200-ac. tract in the George Jameson Sur.
Location.
E. A. Thompson's No. 1 Haynes, 990 ft. out of NW cor. of 320-ac. tract and survey, J. Whitmire Sur., E of Leggett.
Spudded and S.D.
West Prod. Co.'s No. 1 W. T. Carter, 330 ft. due E of SE cor. of W. D. Johnson's 53.7-ac. lease, 3½ miles E of Livingston Field, S. C. Hiram Sur., Abst. A-37.
Drlg. shale 3,820 ft.

REFUGIO COUNTY

Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,520 ft. from E line of J. Coughlin Sur.
Location.

SAN AUGUSTINE COUNTY

Fidelity Exploration Co.'s No. 2 Bryan & Flourney, 400 ft. from No. 1.
T.D. 1,565 ft.

TRINITY COUNTY

Moore and McLaughlin's No. 1 White, 250 varas from N line, 262 varas from E line of 56-ac. tract, Goff Sur.
Spudded.

WALKER COUNTY

Seaport Oil Co.'s No. 1 W. B. Ross, in SE cor. of an 80-ac. tract out of the Wm. Hodge Sur.
Abd. 5,015 ft.

WALLER COUNTY

Smith et al's No. 1 J. S. Garrett, 4,840 ft. NW and 325 ft. NE from SE cor. of S. M. Williams Sur., 3 miles N of San Felipe.
Location.
Stanolind O. & G. Co. et al's No. 1 J. W. Tharp, 466 ft. from S and E lines of J. M. Bennett Sur. No. 100.
T.D. 7,647 ft.; P.B. to 7,466 ft.; tested 3,-180,000 ft. of gas per day; tubing pressure 2,475 lbs.

WHARTON COUNTY

John Deering's No. 1 C. T. and D. Kountze, 1,320 ft. from N line, 330 ft. from E line of S.A.&M.G. Sur., Sec. 1, Abst. 328.
10¾-in. csg. 700 ft.; drlg. plug; T.D. 1,-200 ft.
Texas Co.'s No. 1 Pierce Estate, 4,850 ft. S, 34 deg. E and 4,300 ft. N, 56 deg. E from W cor. of Tract 2, I.&G.N. Sur. No. 38.
Drlg. sand and boulders 325 ft.

SOUTH LOUISIANA

ACADIA PARISH

Humble O. & R. Co.'s No. 1 American Rice Mills, 660 ft. S and 1,320 ft. W from NE cor. Sec. 27-10s-1e.
Drlg. shale 3,165 ft.
Superior Oil Co. et al's No. 1 A. S. Newman, 2,000 ft. N and 1,120 ft. E of SW cor. Sec. 34-7s-1w.
Cutting and pulling liner 5,500 ft.

ASCENSION PARISH

Humble O. & R. Co.'s No. 2 S. Gumbel & Co., 500 ft. southwesterly from No. 1, 275 ft. easterly from road and approx. 475 ft. N of S line of tract. Sec. 33-10s-2e.
T.D. 5,718 ft.; I.P. 54 bbls. per hr.; ¾-in. choke.

AVOYELLES PARISH

Bell Drlg. Co.'s No. 2 Thompson, 450 ft. S, 350 ft. E. NW cor. NE¼ Sec. 11-2n-5e.
Moving in rig.
Southern State Pet. Co.'s No. 1 Boyette, 330 ft. N and 330 ft. E of SW cor. Sec. 21-3n-5e.
Drlg. shale 1,743 ft.

BEAUREGARD PARISH

Richardson & Martin's No. 1 Southwest Lbr. Location.

CALCASIEU PARISH

Fred Oil Co.'s No. 2 Faizst, 262 ft. E and 33 ft. S of NW cor. SE¼ Sec. 26-8s-10w.
Derrick.
Fohs Oil Co.'s No. 1 McIver, 330 ft. S and

W of NE cor. Sec. 14-9s-8w.
Location.
Fohs' No. 1 O. H. Castle, 330 ft. S and 330 ft. W of C Sec. 18-9s-3w.
T.D. 7,065 ft.; flowing 21 bbls. per hr. through 3/16-in. choke; tubing pressure 1,125 lbs.; csg. pressure 1,125 lbs.
Gulf Prod. Co.'s No. 1 H. Starks et al, 1,650 ft. W and 1,980 ft. S of NE cor. Sec. 26-11s-12w.
Drlg. sandy shale 6,519 ft.
Nicholas McCaleb's No. 1 Grey, 2,200 ft. S, 1,200 ft. E of NW cor. Sec. 22-8s-13w.
Rig up.
Texas Co.'s No. 1 Nickerson, 3,139 ft. N and 3,238 ft. W of SE cor. Sec. 12-9s-8w.
Drlg. gumbo 2,730 ft.
Union Sulphur Co.'s No. 1 Powell Lbr. Co., 600 ft. N of No. 1 State, Sec. 12-9s-8w 7-in. csg. 6,737 ft.; T.D. 6,742 ft. in oil sand.
Union Sulphur Co.'s No. 2 State, 748 ft. S and 8 ft. E, NW cor. SW Sec. 12-9s-8w.
Drlg. shale and lime 6,659 ft.
Union Sulphur Co.'s No. 3 State, 2,135 ft. S, 2,340 ft. E of NW cor. Sec. 12-9s-8w.
Location.
Union Sulphur Co.'s No. 1 Castle, 326 ft. N and E of NW Sec. 13-9s-8w.
Drlg. shale 5,518 ft.
Union Sulphur Co.'s No. 1 Buhler, 1,485 ft. N and 425 ft. W of SE cor. Sec. 11-9s-8w.
Drlg. sandy shale 6,234 ft.
Wheeler Oil Co.'s No. 1 Gabbert, 1,323 ft. E and 548 ft. N of SW cor. of Sec. 28-9s-7w.
Drlg. shale 3,320 ft.

EAST FELICIANA PARISH

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,600 ft. E and 1,580 ft. N of SW cor. Sec. 70.
Washing over stuck D.S.; T.D. 1,490 ft.

CAMERON PARISH

Texas Co.'s No. 1 Jessen, 1,170 ft. E and 550 ft. N of C Sec. 24-14s-10w.
Drlg. sand 7,322 ft.

JEFFERSON DAVIS PARISH

George W. Strake's No. 1 Calcasieu Natl. Bank, 200 ft. S and E of NW cor. SE NE Sec. 12-9s-6w.
Drlg. 7,350 ft.

JEFFERSON PARISH

Texas Co.'s No. 1 Bayou St. Dennis, 30,907 ft. S, 4,853 ft. E of NW cor. of Twp., Sec. 19-17s-24e.
Drlg. shale 3,405 ft.

LAFOURCHE PARISH

Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 300 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e.
Spudded and shut down.

PLAQUEMINES PARISH

Venice Corp.'s No. 1 Burras.
T.D. 1,915 ft.; to make D.S. test.

RAPIDES PARISH

J. B. Evers' No. 1 G. Wettermark, 540 ft. S and 520 ft. E, NW cor. NE SW Sec. 35-6n-2e.
Rig up and S.D.
C. D. Loe's No. 1 Barrett, 330 ft. NW of SE line and 330 ft. NE of SW line of Sec. 46-5n-1w.
Rig up and S.D.
Williams-Terrell & Day's No. 1 Armstrong & Murphy, 286 ft. N and 300 ft. W of SE cor. Sec. 24-5n-1w.
Moving in rig.

ST. BERNARD PARISH

Danciger's No. 1 Battles, 836 ft. N, 3,198 ft. W of SE cor. Sec. 135-14s-14e.
Cmtd. csg.; moved off rig; T.D. 6,001 ft.

ST. LANDRY PARISH

H. J. Weir's No. 1 Declouet, Sec. 105-8s-5e, near Lafayette Parish line and 3 miles N of Anse La Bute Field.
S.D. 2,322 ft.

TANGIPOHA PARISH

R. A. Conklin's No. 1 Lake Superior Piling Co., 300 ft. W and N of SE cor. Sec. 19-5s-9e.
S.D. 850 ft.

VERMILLION PARISH

Moore Bros.' No. 1 Brussard, 350 ft. S of N line, 250 ft. E of W line, NE cor. Sec. 32-11s-3e.
S.D. 4,056 ft.

La.-Ark. Wildcats

(Continued from Page 92)

Tooke & Reynolds' No. 1 Levy, 330 ft. N and W, SE cor. NE Sec. 16-20-15.
W.O.S.R. 2,210 ft.
Tooke & Reynolds' No. 2 Levy, 300 ft. S and E, NW cor. SE NE Sec. 16-20-15.
Drlg. 1,200 ft.
Press & Lambert's No. 1 Lane & Simon, 166 ft. S, 1,124 ft. E, NW cor. SW Sec. 15-20-15.
W.O.S.R. 2,196 ft.
V. & F. Oil Co.'s No. 2 Ethison, Sec. 16-20-15.
Drlg. 2,194 ft.

CATAHOULA PARISH

T. R. Hincy's No. 1 La. Central Lbr. Co., Sec. 32-9-6e.
S.D. for D.S. 1,541 ft.
Phillipe et al's No. 1 Central Lbr. Co., Sec. 2-9-6e.
Arranging P.B. from 3,016 ft.

CLAIBORNE PARISH

J. C. King's No. 1 Odes Webb, 330 ft. S and E, NW cor. NW NE Sec. 21-21-8.
S.D. 1,100 ft.

DESOTO PARISH

Bayou Pierre Oil Co.'s No. 1 B. Y. Wemple, C SE NE SW Sec. 14-12-11.
Comp.; pumping 12 bbls., 2,731 ft.
Century O. & Drlg. Co.'s No. 1 Morton, 300 ft. N and E SW cor. SE NE Sec. 27-11-14.
Flowing by heads 2,525 ft.
W. T. Coleman's No. 1 Ferguson 600 ft. N, 330 ft. E, SW cor. Sec. 18-12-12.
Set 8-in. 850 ft.
Dempsey & Manziel's No. 1 Thigpen, 375 ft. S, 330 ft. W, NE cor. SW NE Sec. 33-13-13.
Testing 1,745 ft.
DeSoto Pet. Co.'s No. 1 B. Y. Wemple, C S½ SE NE SW Sec. 14-12-11.
S.D. 2,073 ft.
E. L. Foster's No. 1 Youngblood, Sec. 9-11-14.
S.D. 1,830 ft.
Bailey Gaunce's No. 2 B. F. Jenkins, Sec. 35-12-12; O.W.D.D.
Coring 3,565 ft.
Hester et al's No. 1-A T. R. Alston, 360 ft. S, 330 ft. W, C Sec. 11-11-16.
Set 10-in. 42 ft.
Leslie Prod. Co.'s No. 1 Ramsey, 150 ft. N and W of C Sec. 36-11-11.
Set 10-in. 45 ft.
C. T. Ruffin's No. 1 J. M. Nabors, 300 ft. S and E, NW cor. SW Sec. 32-13-11.
Set 10-in. 85 ft.; drlg. 1,200 ft.
Ben F. Smith's No. 1 Bonds, 200 ft. E, 500 ft. N, SW cor. Sec. 23-12-11.
S.D. 2,749 ft.
National Oils, Inc.'s No. 1 B. Y. Wemple, NW SW Sec. 14-12-11.
S.D. 120 ft.

EAST CARROLL PARISH

Century Oil & Drlg. Co.'s No. 1 Olive Dell, 660 ft. S, 300 ft. W, NE cor. Sec. 56-21-21e.
S.D. 150 ft.

GRANT PARISH

C. & S. Oil Corp.'s No. 1 Swope, Sec. 17-19-1e.
Rigging up

LA SALLE PARISH

J. B. Collins, tr.'s No. 2 Urania, Sec. 7-10-2e.
Comp.; pumping 20 bbls., 1,528 ft.
Fred Graham's No. 1 Urania, 300 ft. N, 150 ft. E, SW cor. SW NW Sec. 18-20-2e.
Comp.; pumping 25 bbls., 1,521 ft.
F. A. Trichello's No. 1 Urania, Sec. 3-9-1e.
S.D.; junked hole 1,491 feet.

NATCHITOCHES PARISH

Clyde Crichton's No. 1 Friedman Est., 406 ft. N, 428 ft. E, SW cor. Sec. 52-7-6.
Drlg. 2,290 ft.
Missouri Drlg. Co.'s No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10.
S.D. 1,033 ft.
Roy A. Raines et al's No. 1 Raines est., 330 ft. N and E, SW cor. Sec. 8-9-10.
Fishing for D.S. 3,200 ft.

OUACHITA PARISH

Hatcher & Evans' No. 11 fee, 2,065 ft. S, 3,394 ft. E, NW cor. Sec. 17, in Sec. 41-19-4e.
Set 6-in. 2,154 ft.

RAPIDES PARISH

C. D. Loe, trustee's No. 1 Baird Est., SE cor. Sec. 40-5n-1w.
Rigged and waiting orders.

RED RIVER PARISH

Sterling O. & R. Co.'s No. 1 Long Bell, 150 ft. N and W, SE cor. NE SE Sec. 19-13-9.
Dry and abd. 2,525 ft.
J. S. Tuffree's No. 1 Wilkinson, 1,320 ft. S and W, NE cor. Sec. 11-12-11.
S.D. for fuel 1,180 ft.

SABINE PARISH

H. J. Brothers et al's No. 1 Edwards, 300 ft. S and W, NE cor. SW NW Sec. 29-9-13.
Pumped off; S.D.; W.O. 1,887 ft.
R. B. Campbell et al's No. 1 Cook Land Co., 150 ft. N, 300 ft. W, SE cor. NW NW Dry and abd. 2,130 ft.
Crescent Drlg. Co.'s No. 3 Garner, Sec. 3-7-11.
Rigging up.
Frank R. Foster, Inc.'s No. 1 Phillips, 250 ft. N, 288 ft. E, SW cor. SW NW Sec. 16-9-11.
Set 10-in. 40 ft.; drlg. 2,710 ft.
M. T. Hines' No. 1 J. B. Hill, SW NE Sec. 4-6-11.
Rigging up.
Helena Oil & Gas Co.'s No. 1-B Graham, 330 ft. S and W NE cor. NE NW Sec. 20-9-13.
S.D. 2,000 ft.
Lawson-Leavell's No. 3 Bank of P. H., 330 ft. S and E, NW cor. NW NE Sec. 29-9-13.
Derrick.
Lawson-Leavell's No. 1 Whitney Corp., 330 ft. N and E, SW cor. NE SW Sec. 5-9-13.
Skidded 60 ft. E; drlg. at 1,000 ft. in new hole.
Jack Lent's No. 1 Williams, Sec. 13-7-11.
S.D. 950 ft.
Dave McConnell's No. 1 Whiting Corp., Sec. 3-9-13.
Rigging up.
Dr. O. B. Hicks' No. 1 Neal, SE SW SE Sec. 18-9-12.
Abd.; will not drill.
Strickland et al's No. 1 Whitney Corp., Sec. 32-10-12.
Recmt. 8-in.; T.D. 1,590 ft.

TENSAS PARISH

Schumacher, tr.'s No. 1 Curry, Sec. 39-11-12e.
Arranging to deepen 3,750 ft.

UNION PARISH

Carbons Con.'s No. 8 fee, C NW NW SW Sec. 35-22-3e.
Set 12½-in. 180 ft.; set 8-in. 770 ft.
Interstate Nat. Gas Co.'s No. 6 Spencer, Sec. 2-20-3e.
Set 6-in. 2,092 ft.

ARKANSAS

ARKANSAS COUNTY

Grand Prairie Realty Co.'s No. 1 Fischer, 200 ft. S and E, NW cor. NE NW Sec. 6-6s-4w.
Drlg. 2,500 ft.

ASHLEY COUNTY

J. D. Houseman et al's No. 1 Boreine Farms, 660 ft. S and W, NE cor. Sec. 1-18-8.
Rigging up.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26.
S.D. 1,992 ft.

LAFAYETTE COUNTY

W. H. Harvey's No. 2 Allen, Sec. 18-19-24.
Arranging to resume drlg. 850 ft.
Kamon & Neely's No. 1 Cockran, NW cor. SE SW Sec. 26-19-25.
S.D. for repairs, 1,700 ft.
Riggs Bros.' No. 1 Dubose, SE cor. SW NW Sec. 35-15-24.
Set 10-in. 100 ft.

LONOKE COUNTY

J. G. Strahan's No. 1 Hardin, Sec. 18-2s-7w.
S.D. for fuel 1,630 ft.

MILLER COUNTY

Ed Donohue's No. 2 Beck, Sec. 33-15-26.
Set 10-in. 100 ft.; drlg. 350 ft.
Duluth-Ark. Oil Co.'s No. 4 Beck, SE cor. SE SW Sec. 34-15-26.
W.O.S.R. 2,941 ft.
Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27.
S.D. 3,177 ft.
Ark. Oil, Gas & Ref. Co.'s No. 1 Beck, SW cor. NW SW Sec. 34-15-26.
1,200 ft. oil in hole at 2,920 ft.
King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 3,167 ft.
King Oil Corp.'s No. 1 Anderson, 350 ft. E, 200 ft. S, NW cor. SW NE Sec. 16-14-27.
S.D. for fuel 780 ft.
Magnolia Pet. Co.'s No. 7 Olivet, 330 ft. S and W, NE cor. NW Sec. 3-16-26.
Set 8-in. 2,947 ft.
Magnolia Pet. Co.'s No. 6 Olivet, 330 ft. S and E, NW cor. NE NW Sec. 3-16-26.
Comp.; pumping 165 bbls., 2,933 ft.
A. C. Roan's No. 1 Frost Est., 150 ft. N and W, SE cor. SE SW Sec. 8-15-26.
Set 10-in. 120 ft.
Lee Timberlake's No. 1 Frost Est., 330 ft. N and E, SW cor. SW SE Sec. 27-15-26.
Drlg. 2,310 ft.
John Wrather's No. 2 H. E. Beck, 330 ft. N and W, SE cor. SW SE Sec. 34-15-26.
Coring 2,796 ft.

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 24-15-16.
S.D. 2,032 ft.
S. J. Carnes' No. 1 L. Caldwell, 330 ft. S and E, NW cor. Sec. 12-14-19.
S.D. 102 ft.
Kraft Oil Corp.'s No. 1 Rath & Cartier, 330 ft. S and E, NW cor. SW SW Sec. 32-13-17.
Set 10-in. 41 ft.; arranging to test 1,426 ft.
J. D. Reynolds' No. 1 M. Bragg, 330 ft. N and E, SW cor. NW SE Sec. 25-13-18.
Set 10-in. 83 ft.; drlg. 722 ft.

UNION COUNTY

J. E. Crosbie, Inc.'s No. 1 W. E. Gregory, 330 ft. S and E, NW cor. NE Sec. 15-17-14.
T.A. 3,503 ft.
J. E. Crosbie, Inc.'s No. 2-A E. F. Gregory, 330 ft. N and E, SW cor. NE SW Sec. 10-17-14.
Rigging up.
Durand Dev. Co.'s No. 1 Ezzell, 330 ft. S and W, NE cor. Sec. 13-17-15.
Dry and abd. 3,512 ft.
Gardy Drlg. Co.'s No. 1 Craig, Sec. 35-17-15.
Set 12½-in. 105 ft.; drlg. 1,620 ft.
Gulf Ref. Co.'s No. 49 L. Werner, 4,620 ft. N, 60 ft. E, SW cor. Sec. 5-16-16.
Rigging up.
E. R. Henderson's No. 2 Vines, NW cor. SW SE Sec. 29-18-14.
W.O.S.R. 2,205 ft.
H. L. Hunt's No. 15 E. F. Gregory, 330 ft. N and W, SE cor. Sec. 10-17-14.
Coring 4,592 ft.
H. L. Hunt's No. 18 E. F. Gregory, 330 ft. N and E, SW cor. Sec. 11-17-14.
Derrick.
T. L. James & Co.'s No. 1 Gregory, 330 ft. S and W, NE cor. N½ NW SW Sec. 10-17-14.
Comp.; flowing 100 bbls., 3,390 ft.
Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Set 7-in. 2,746 ft.; T.D. 2,765 ft.
Lion Oil Ref. Co.'s No. 6 H. L. Rowland, 330 ft. S and W, NE cor. Sec. 15-17-14.
T.A. 3,427 ft.
Marine Oil Co.'s No. 7-A W. B. Thompson, 330 ft. N and W, SE cor. SW SE Sec. 3-18-13.
Rigged up and S.D.
Joe Modisette et al's No. 1 D. S. Sturdevant, 330 ft. N and W, SE cor. Sec. 6-18-13.
Moving in rig.
C. E. Murdock's No. 8 J. M. Gregory, C NW NE SE Sec. 10-17-14.
Coring 3,303 ft.
C. E. Murdock, Inc.'s No. 7 J. M. Gregory, 330 ft. N, 330 ft. W, SE cor. NE SE Sec. 10-17-14.
W.O.S.R. 3,318 ft.
C. E. Murdock's No. 1 R. Pumphrey, C SW NW NE Sec. 11-17-14.
Derrick.
Reuter Oil Co., Inc.'s No. 1 J. L. Kinard, 330 ft. S and E, NW cor. SE NW Sec. 32-18-14.
Pumping 2,189 ft.; no gauge.
Geo. L. Pace's No. 1 Union Saw Mill Co., 330 ft. S and W, NE cor. NE SW Sec. 24-18-12.
Coring 2,160 ft.
S. H. A. Oil Co.'s No. 5 Taylor, Sec. 10-17-14.
Comp.; flowing 800 bbls., 3,343 ft.
Skelly Oil Co.'s No. 7 Perdue, 330 ft. N and E SW cor. SE NW Sec. 10-17-14.
Comp.; pumping 100 bbls.; 3,380 ft.
Grady Vaughn's No. 1 T. B. Rowland, 330 ft. S and E, NW cor. Sec. 14-17-14.
Derrick.

MISSISSIPPI

AMITE COUNTY

Mineral Resources, Inc.'s No. 1 Anderson, C NE NW Sec. 14-3n-3e.
S.D. 550 ft.

BOLIVAR COUNTY

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w.
S.D. 20 ft.

CLARKE COUNTY

Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e.
Set 10-in. 63 ft.

HARRISON COUNTY

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 13-7s-10w.
S.D.; W.O. 1,100 ft.

HINDS COUNTC

Bob Weaver's No. 1 T. Russell & Oparka, C NW SW NE Sec. 36-6n-1e.
Rigging up.

ISSEQUENA COUNTY

Pelican Oil & Gasoline Co.'s No. 1 Martin & Bender, 300 ft. S and E, NW cor. Sec. 11-12n-3w.
S.D.; curing titles, 3,227 ft.

JONES COUNTY

Snow-Black Pet. Co.'s No. 2 Watson, 530 ft. W, 200 ft. S, C Sec. 24-7n-13w.
Junked and abd. 3,900 ft.
Snow-Black Pet. Co.'s No. 1 Fox, 400 ft. N, 750 ft. W, SE cor. SE SW Sec. 30-7n-12w.
Rigging up.

LAUDERDALE COUNTY

Bob Dalton's No. 1 Bounds, Sec. 34-7n-15e.
Set 10-in. 560 ft.; S.D.; W.O.

MONROE COUNTY

P. J. McAlpine's No. 1 Frank Rye, Sec. 15-15s-17w.
S.D. 2,910 ft.
P. J. McAlpine's No. 1 Crook, 1,090 ft. S 90 ft. W, NE cor. Sec. 15-13s-13w.
Arranging to set 6-in. 1,514 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 24-2n-9e.
Partly rigged up and S.D.

WARREN COUNTY

H. W. Elliott et al's No. 2 R. L. Parker, 780 ft. E, 1,570 ft. S, NW cor. Sec. 14-14n-1e.
Drlg. gumbo 600 ft.

WASHINGTON COUNTY

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 600 ft. N, SW cor. Sec. 33-15n-3w.
Set 10-in. 300 ft. and S.D.

WINSTON COUNTY

Jack Vale et al's No. 1 Moody, 713 ft. N, 667 ft. E, SW cor. NW SW Sec. 3-13n-14e.
Drlg. black shale 790 ft.

La.-Ark. Proven Fields

NORTH LOUISIANA

CADDO—BLANCHARD

M. Segall's No. 5 Sharps, Sec. 11-18-16.
Rigged up and S.D.

CADDO—HOSSTON

Shoreline Oil Corp.'s No. 44 Crystal, 330 ft. S and E of C Sec. 13-21-16.
Derrick.

CADDO—RODESSA

United Gas Pub. Ser. Co.'s No. 1 Fosque Unit, 1,320 ft. N and E, SW cor. Sec. 28-23-16.
Set 16-in. 214 ft.; drlg. 515 ft.
United Gas Pub. Ser. Co.'s No. 1 Johnson Unit, 1,245 ft. S, 1,365 ft. W, NE cor. Sec. 26-23-16.
Location.

SABINE PARISH—ZWOLLE

Alexander & Crane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
Set 6-in. 2,373 ft.
Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 2,120 ft.
E. D. Holcomb's No. 1 Porter, 330 ft. S, 330 ft. W, NE cor. SE Sec. 7-7-11.
Pulling liner 2,580 ft.
H. C. Maulding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 3-7-11.
Rigging up.
H. C. Maulding's No. 2 DeLatin, 330 ft. S and E, NW cor. NE SE Sec. 3-7-11.
S.D. 2,250 ft.
K. C. Peterson et al's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. SW NW Sec. 2-7-9.
Derrick down.
Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12.
S.D. 2,742 ft.

EAST TEXAS (BORDER COUNTIES)

HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur.
P.B. to 3,524 ft.

MARION COUNTY

Ed S. Holman's No. 1 Henderson, R. Bennington Sur.
Drlg. 2,600 ft.

PANOLA COUNTY

R. H. Davis' No. 1 Wooten Est., Winnie Mann Sur.
S.W. and abd. 2,142 ft.
Givens & Holloway's No. 1 Wooten est., Winnie Mann Sur.
Dry and abd. 2,153 ft.
T.A. 2,153 ft.
R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Set 10-in. 64 ft.
Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S.
S.D. for csg. 1,980 ft.
Thomason Drlg. Co.'s No. 1 Cadenhead, Jas. Smith Sur.
Drlg. 2,230 ft.

SHELBY COUNTY

Cliff Stovall's No. 1 Pickering Lbr. Co., C H. Patterson Sur.
S.D.; rig repair, 1,485 ft.
O. P. Bush, trustee's No. 1 Pickering Lbr. Co., F. W. Harvey Sur.
S.D. 730 ft.

ALABAMA

CONECUH COUNTY

Ray L. Eastabrook's No. 1 Miller Mill Co., W¼ NE Sec. 1-4n-12e.
Drlg. red shale 4,300 ft.

COVINGTON COUNTY

Geometer Prod. Corp.'s No. 1 Culbreath, SW cor. SW NE Sec. 8-2n-14e.
Drlg. 2,700 ft.

HOUSTON COUNTY

Rice O. & G. Co.'s No. 1 Oakley est., SE cor. NW SW Sec. 9-3n-29e.
S.D.; W.O. 2,506 ft.

LAMAR COUNTY

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 23-15s-16w.
S.D. 4,182 ft.

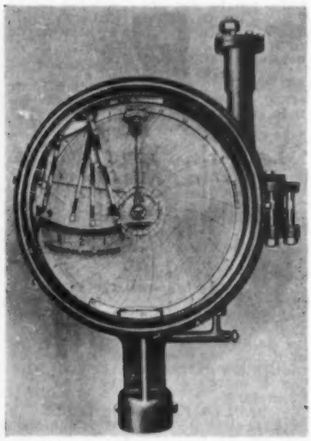
WALTON COUNTY—FLORIDA

Geometer Oil Corp.'s No. 2 Walton Land & Timber Co., Sec. 10-1s-19w.
Rigging up.

NEW AND IMPROVED EQUIPMENT

Advantages of Two Meters United in Foxboro Device

A universal meter designed to measure any fluid under any industrial condition is the latest addition to the line of meters manufactured and sold by the Foxboro Co., Foxboro, Mass. If merely a simple recording meter is required, a universal meter fills the need, according to the manufacturer. On the other hand, should conditions demand pressure compensation



or correlated temperature, pressure, and flow records, these also are obtained in a universal meter.

This new measuring instrument has a flow rangeability of 10 to 1. Thus, in one instrument, the rangeability advantages of two separate meters have been combined.

The charts have uniform graduations which make reading the records easy. Where it is necessary or desirable, temperature and pressure records may be recorded on the same chart with the flow. When a multiple-pen recorder is furnished, all pens move about the same center of rotation and will not interfere with each other at any point in their travel.

A new mechanical integrator has been built especially for this meter. It shows the total flow on an easily read counter. No multipliers are necessary since the counter reads directly in terms of total flow. A recording pen can be added which makes a mark on the chart rim when the integrator adds a given amount to its count.

New metering accuracies are made possible by the Foxboro pressure compensator. This is furnished on the universal meter wherever widely varying static pressures make it otherwise impossible to get accurate measurement.

The universal meter is for measuring steam, oil, air, water, gas, acids or any other fluid under any industrial condition.

NEW SPRAY GUNS ANNOUNCED

Two new spray guns, "Thor" Models 5 and 6, have been announced by the Binks Manufacturing Co., 3140 Carroll Avenue, Chicago. The No. 5 is a perfected touch-up and shading gun. The No. 6 is a combination touch-up and general service gun of highly developed efficiency. These guns have been designed to meet the need of a touch-up gun with an adjustable spray that easily could be adjusted while the operator manipulated a spray that could be widened or narrowed as it moves over the surface being finished. This spray adjustment is accomplished by means of a screw on the side just behind the nozzel head.

Among the Equipment Houses

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., was host at an "open house" when the West Allis works, covering 155 acres, was opened to the families of employes and invited guests. More than 30,000 persons are reported to have visited the plant.

—

E. W. Bixby has joined the Pittsburgh Equitable Meter Co.'s sales organization in the recently opened office of his company at 67 McCall Street, Memphis, Tenn. He was formerly sales manager for the Columbian Iron Works, Chattanooga, Tenn.

—

Ralph H. Clore, formerly general sales manager for the United States Electrical Tool Co., has been installed in a similar position with the Medart Co., power transmission machinery, St. Louis, Mo. He succeeds F. P. Kohlbry, who has taken active charge of the Machinery & Welder Corp., Chicago.

—

Homestead Valve Manufacturing Co., Coraopolis, Pa., announces the following representatives for the sale and distribution of Homestead valves: Carey Machinery & Supply Co., 119 East Lombard Street, Baltimore, Md.; L. E. Livingstone, 2012 Ward Parkway, Fort Worth, Tex.; Charles A. Randorf, 83 Delham Avenue, Buffalo, N. Y.; Atkins, Kroll & Co., 260 California Street, San Francisco, as exclusive representative in the Philippine Islands.

—

The Walworth Co. has reopened its Houston, Tex., office at 1117 Second National Bank Building.

—

Durrell Davis, formerly chief engineer for the Highway Trailer Co., Edgerton, Wis., has joined the Spencer Trailer Co. of Augusta, Kans., as chief engineer and production manager.

—

M. E. Maggart, of the Maggart Corp., which handles the advertising accounts of Williamsport Wire Rope Co. and other large concerns, is on a business and pleasure trip to Porto Rico.

—

Francis S. Irvine, well known Oklahoma oil supply man, has joined the Republic Supply Co. organization as a field salesman. He will have his headquarters in Hutchinson, Kans.

—

Paul W. Gregory has been appointed general manager of the Canton Culvert Co., Canton, Ohio, subsidiary of Republic Steel Corp. He succeeds F. A. Kelly, recently made president of the Toncan Culvert Manufacturers Association, Youngstown, Ohio, and head of Republic's culvert division.

New Two-Stage Air-Cooled Compressors Made by CP

In announcing its two-stage air-cooled portable compressors with six-cylinder engines, gasoline or Diesel driven, the Chi-

cago Pneumatic Tool Co., 6 East Forty-fourth Street, enumerates the following advantages which it says are embodied in these machines:

Simplicity. No more parts than single-stage type; only one connecting rod on each crank pin.

Six-cylinder engine. Smoothness of operation, easy starting.

Lower maintenance cost. Fewer parts to maintain, full floating piston pins (no seizures or cylinder scoring), superior valve design, force-feed lubrication.

Free-air unloading system. Economical, lowest temperatures.

Simplate valves. Simple, durable, efficient.

Self-adjusting trouble-free clutch.

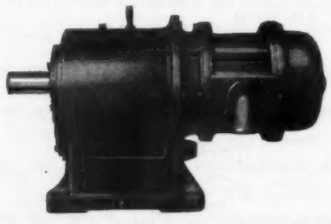
Cast-steel deck. Rigid and secure.

Two air cylinders are used on the smallest two sizes and four cylinders on the larger sizes, cast in pairs. Their vertical, in-line arrangement leaves room on both sides of crankcase for large doors to give access to bearings; permits using a separate crank pin for each connecting rod, greatly facilitating crank pin bearing adjustment and makes all cylinders and valves easily accessible.

Motorized Speed Reducer Is Marketed by Link-Belt

The Link-Belt Co., Philadelphia, Chicago and San Francisco, has placed on the market a new line of motorized helical-gear reducers, an outstanding feature of which is the unusual accessibility of the motor and the high-speed gears.

A standard round-frame motor is secured firmly to the side of the reducer housing by means of an adapter casting which supports the motor shaft in oversize antifriction bearings close to the pinion, thus assuring good alignment and



proper mesh of pinion with its mate. The complete motor, with adapter and motor pinion, may be removed as a unit for inspection or maintenance without disturbing the alignment of the motor or of the gears remaining in the reducer housing. In fact, the motor pinion and gear are removable without disconnecting the driven machine or disturbing the low-speed gears.

The new reducers may be mounted on floor, ceiling or wall and are available in double reduction for one-half to 75 horsepower, in ratios up to 38½ to 1, and in triple reduction up to 30 horsepower, in ratios up to 292 to 1. They embody the usual advantages of not requiring a motor base plate or a high-speed shaft coupling, and as the motor forms an integral part of the reducer, proper alignment of motor shaft is definitely assured at all times.

Manhattan Introduces Hose Which Equalizes Stresses

A new air hose, possessing to an increased extent the advantages of both wrapped duck and braided hose with none of their weaknesses, has been an-

nounced by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J.

In the new construction, for which patents have been applied, the unequal ply stresses set up in the wall of the hose by longitudinal and lateral tension incident to operation, are compensated and made equal. This is accomplished solely within the unique construction, which consists of two strength members, a braided cord member for longitudinal stresses, and a spiraled strength member for expansion and lateral stresses, both welded in tough age-resisting rubber.

By this balanced construction internal friction and chafing are eliminated. It effectively resists surge and pulsation. Compensated air hose is so strong that present-day working pressures may be completely disregarded.

One of many facts discovered during extensive tests is said to have been the definitely longer life and superiority of the compensated construction.

Roots-Connersville Offers Pump for Volatile Liquids

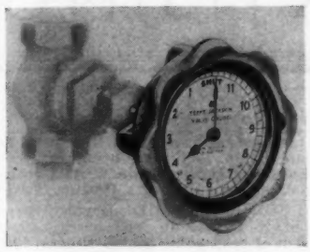
Roots-Connersville Blower Corp., Connersville, Ind., which has been building refinery equipment for many years, have introduced a line of volatile liquid pumps primarily designed for use in bulk station service, although adaptable to other applications in kindred fields.

These units utilize the standard type "T" turbine pump, but are equipped with a priming chamber, including integral by-pass and relief valve, which, according to the company, enables the pumps to handle gasoline satisfactorily even in the hottest summer weather. An inherent high vacuum readily evacuates

long pipe runs, thus facilitating the self-priming of these pumps. Company officials are authority for the statement that tests last summer, when temperatures in tank cars frequently exceeded 100° F., proved that even high gravity gasoline can be handled successfully under conditions that are usually considered adverse.

Indicator Shows Position of the Valve at a Glance

A valve position indicator, developed by Tefft-Jackson, Inc., 29 River Street, Pawtucket, R. I., tells at a glance whether a valve is shut or how many turns open or what proportion thereof, operates by a positive gravity mechanism making it



applicable to valves whose stems are in a horizontal or semihorizontal position.

The manufacturer says the indicator is ideal for manual control work as the same setting will give the same result each time the valve is operated. The indicator is adjustable in its own bracket which replaces the regular valve wheel, enabling resetting when the valve wears or when new seat and disc are installed.

When the large and small hands of the indicator are at "shut" the valve is closed. When the small hand is at 1 and large hand at "shut" the valve is one turn open, and so on.

Several sizes are available and special attachments may be had for large valves, rising stem valves and overhead chain-operated valves.

American Manufacturers Will Have Agent in Italy

Compagnia Tecnica Industrie Petroli has been organized with headquarters in Milan, Italy, for the sale, engineering service, and manufacture of equipment which will be needed in the contemplated expansion of the Italian oil industry. This company is acting as sales and manufacturing agent for American manufacturers and for American processes. Among the companies it will represent are: Max B. Miller & Co., for Duo-Sol and contact filtration plants; Oil Conservation Engineering Co., for the line of Oceco specialties; Girdler Corp., for the selective gas absorption processes; and C. H. Leach Co., for all types of high and low pressure heat exchangers.

The company will also act as sales agent and distributor for the Oil Well Supply Co. for drilling machinery and production equipment. Other lines of non-competing equipment may be added from time to time.

This organization will offer to the oil companies engaged in the construction or installation of equipment in Italy the advantage of being able to buy American equipment made within the country. Italian regulations are specific to the effect that there shall be no imports of equipment or material that can be furnished by the Italian manufacturers.

H. S. Bell, of New York, petroleum engineer, will have his headquarters in Italy and act as advisor to the new company. Comm. Ing. Giorgio Varvaro, an engineer of broad experience in the public utility and industrial field in Italy, will be associated with the enterprise.

A bulletin illustrating the various types of aftercoolers made by Ingersoll-Rand, 11 Broadway, New York, is being distributed. It explains the reasons why aftercoolers are needed, and how the different types of aftercoolers fit into certain compressor plant conditions.

Notes About Trade Literature

A bulletin published by the Harnischfeger Corp., West National Avenue, Milwaukee, Wis., gives details of construction and operation of new convertible P&H motors ranging from one-half horsepower, 600 r.p.m., to 125-horsepower, 3,600 r.p.m. The bulletin is designated as HM-1.

A bulletin (No. 190) issued by the Pyle-National Co., 1334 North Kostner Avenue, Chicago, describes 48 types of safety portable hand lamps, including a new type barrel and drum inspection lamp of vapor-proof construction.

Catalog 11-G4, announced by the Edward Valve & Manufacturing Co., East Chicago, Ind., describes a line of forged-steel strainers designed for removal of scale, grit and dirt from traps, pressure regulators, etc.

The Western fire hydrant is described in Bulletin No. 307, issued by the Western Gas Construction division of the Koppers Construction Co., Fort Wayne, Ind.

A request sent to the Armite Laboratories, 1900 East Sixty-fifth Street, Los Angeles, Calif., brings literature concerning the company's new hard facing material for bits and reamers.

Clark Brothers Co., Olean, N. Y., is mailing to those who ask for it Bulletin No. 200-62, describing its new Bobcat pumping engine, designed especially for geared and chain-driven pumping units.

"Eighty-eight Years of Progress" is the title of an illustrated booklet of 40 pages prepared by the Allis-Chalmers Manufacturing Co., Milwaukee, Wis., giving an interesting account of the company's growth in the manufacture of machinery used in the oil and other industries. The booklet signalizes the installation of certain large engineering units at the company's West Allis works.

A bulletin on Bethlehem silico-manganese steel for heavy-duty springs is obtainable from Bethelehem Steel Co., Bethlehem, Pa.

Heat-treated forgings are discussed in an illustrated bulletin issued by Kropp Forge Co., 5301 West Roosevelt Road, Chicago.

The question "How can you get increased efficiency from your gasket installations?" is answered in a four-page folder put out by Victor Manufacturing Co., 5750 Roosevelt Road, Chicago.

Homestead Valve Manufacturing Co., Coraopolis, Pa., has issued a 46-page illustrated reference book (No. 37), describing its complete line of valves.

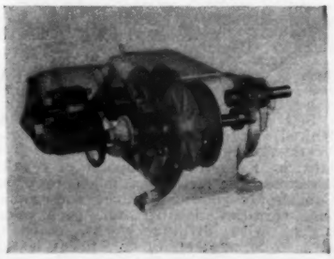
Descriptions, prices and illustrations of spray guns for finishing, cleaning and oiling, cup-type containers, pressure containers, oil-and-water extractors, hose, air regulators, nozzles, compressors, portable spray outfits, spray booths and exhaust units appear in a 32-page two-color booklet (Bulletin AD 114) published by the Binks Manufacturing Co., 3114 Carroll Avenue, Chicago.

"A Ripple That Became a Tidal Wave" is the title of a six-page bulletin published by the Sprague-Sells Corp., Hoopeston, Ill., and narrating the story of canned oil.

Under the title, "A Story of Man-Made Rubber," popular description of DuPrene, a synthetic rubber, is given in a small illustrated booklet just issued by the rubber chemicals division, E. I. du Pont de Nemours & Co., Wilmington, Del.

Improved Varidrive Motor Effects Important Savings

An improved development in variable speed for use in the oil and gas industry is announced by the U. S. Electrical

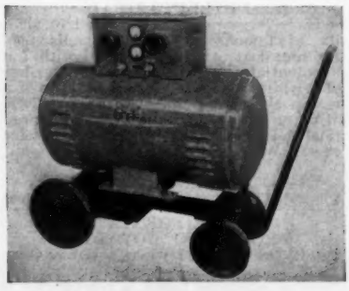


Manufacturing Co., Los Angeles, Calif. The phantom view of the U. S. Vari drive motor shows a new lever arm construction developed for the larger horsepower ratings and shows also how the formerly separate units consisting of a constant speed motor, a variable speed device, and a gear case have been built into one compact unit at a saving in space, in addition to the economy effected by elimination of mounting bases and transmissions, such as couplings, fans and belts between the component parts.

The phantom view shows how the speed change is obtained by the micro-speed control which varies the effective driving diameter of the varidiscs. These discs expand and contract for higher and lower speeds transmitting power through the varibelt to the take-off shaft. This new motor, being self-contained, can be conveniently direct-connected to machinery. It places at the operator's command any variation of speed so that the driven machine can be operated at its highest capacity at the will of the operator.

Unity Power Factor Motor Drive Marks Ideal Welder

The Ideal Electric & Manufacturing Co. of Mansfield, Ohio, has developed a new design of arc welder featuring unity power factor motor drive, and an extremely fast arc with exceptional recovery speed. An arrangement of generator windings utilizing a separate auxiliary differential field structure produces improvement in welding performance. Os-



cillograph tests are said to show recovery from short circuit to normal welding current in less than .01 of a second. Also the Nole "Speed Arc" welder is said to maintain its current and voltage settings when started up cold and run full load for any period desired. The temperature rise of the machine has no effect on the current and voltage settings in this welder.

Noel welders provide both 25 and 40-volt operation by a simple adjustment of the controls. This permits the use of the new improved high speed coated rods, as well as standard uncoated rod, and also allows copper arc and carbon electrode work, all on the same machine.

Men Well Known in the Equipment Field

E. L. HAGAR

E. L. Hagar, formerly sales manager for the Walter O'Bannon Co., is now associated with the Mid-Continent Supply Co. as sales representative with headquarters in the Philtower Building, Tulsa.

Pump Drives Made to Meet Needs of Deep-Well Fields

The IXL line of deep-well pumping helical-gear drives for operating walking-beam pumps, developed by Foote Brothers Gear & Machine Co., 5301 South Western Boulevard, Chicago, were especially designed and engineered to meet the conditions encountered in the East Texas and Oklahoma City oil fields. They are built to withstand the heavy service imposed by this type of operation. They have a large factor of safety with heavy-duty gears and over-size bearings, all rigidly mounted in a semisteel heavily ribbed case. The crankshafts are made of chrome molybdenum nickel steel alloy. There are no shoulders on these shafts to cause localized stresses.

IXL oil pump drives are designed for operating independent portable pump rigs, reducing the speed of the prime mover down to the desired speed of the pumping unit. They can be powered by either gas engines or by electric motors direct-connected or coupled to the gear reduction unit, or by V bents, chain drives, etc.

The drives are made in two types, the type SXO single-reduction unit, and the type DXO double-reduction unit. Both types can be furnished with double extended slow speed shaft for twin crank drives if desired. All units are provided with flywheel and brake.

GRIFFIN WELLPOINT SYSTEM

The Griffin Wellpoint Corp., Lincoln Building, New York, announces a new wellpoint system, the outstanding features of which are: (1) The "Jet 'n Drive" head, particularly adaptable for use in the gravels, clay and hard subsoils which have been found practically impenetrable by ordinary jetting methods. The head is of the one-ball design, permitting easier sinking and quicker cleaning without pulling. (2) "Interflow," a Griffin feature, which is the arrangement of a water flow between the drainage channels to prevent their becoming blocked. (3) Streamline construction, the wellpoint having the same outside diameter as the oversize riser pipe, thus decreasing friction loss and insuring complete salvage, as the head is strong enough to resist breaking when the piping is pulled.

Michigan Fields

(Continued from Page 96)

watched closely as the latest of 25 tests drilled in the vicinity during recent years on a known structure but without success. It will be the first one to test the Trenton limestone, however.

Black Diamond Petroleum Syndicate's No. 1 Vaughn, a wildcat test located NW NW NE Section 28-24n-4w, Lyon Townships, Roscommon County, was reported shut down at 3,200 feet. but considering deepening.

Wexford County Test Reported

M. J. Ingold, of St. Louis, Mich., is reported to have moved a rig into Wexford County for a new wildcat test near Cadillac where several ventures have been unsuccessful during recent years tthough geologists continue to have faith in the territory.

The Roosevelt Oil Co.'s No. 1 Arnold Haviland, SE NE SE Section 4-17n-2w, Beaverton Township, was drilling below 1,400 feet as the deepest of several Gladwin County tests in the vicinity of M. F. Whitehill's discovery Kintner well.

Sun Oil Co. was forced to skid rig a second time on its No. 1 Mary A. Hines, C NW NE Section 31-17n-1w, Tobacco Township, after having difficulty with drive pipe. A new hole will be started this week. M. F. Whitehill had not yet spudded in his No. 1 Spicer, N SW NW Section 11, Beaverton Township, direct south offset to the Kintner well.

McClanahan Oil Co. was rigging up and preparing to spud soon on the No. 1 Heath Ranch, SW NW SW Section 31, 19n-3e, across the county line from Gladwin County in Adams Township, Arenac County.

After being shut down at about 1,900 feet for about two months, the Geosyn Oil Co.'s No. 1 Frank and Bessie Hnevsa, NE NE NW Section 34-8n-2e, Rush Township, Shiawassee County, was preparing to resume drilling.

Chapin Oil & Gas Co. also was preparing to resume operations in the No. 1 Sutliff, Section 16-9n-1e, Chapin Township, Saginaw County.

Muskegon-Oceana

The West Michigan Consumers Co. has started deepening the former Citizens-Lake Shore Development Co.'s No. 1 John B. Nichols well, C S SE NW Section 8-10n-16w, Muskegon Township, Muskegon County, from the Dundee to the Monroe gas sands instead of the Muskegon Development Co.'s No. 3 Fred Hartman, SE SE NW Section 9, same township as previously announced. Both wells will be deepened to the Monroe for West Michigan by the Muskegon Development Co. Joseph Murlin also has started deepening the former Fleeger-Ohlson No. 1 Stanley Daniloff, SW SW SE Section 5, Muskegon Township, about 100 feet into the Monroe formation seeking gas for the West Michigan Co.

The Reed Oil Co. is ready to drill into the lower Traverse in the No. 1 J. J. Fagan & Co., SW NE SW Section 10, Muskegon Township, on the Muskegon River flats after striking only a light show in the upper Traverse. The hole is about 1,800 feet deep.

Rigs are up for two new tests in the Oceana County Field but drilling has not yet been started. They are: John B. Northcott's No. 3 Jane Pinder, C S NW NW Section 31-15n-16w, Elbridge Township, and H. C. Nelson's No. 2 Viola Smith, NW NE NE Section 36-15n-17w, Hart Township, on adjoining leases.

West Michigan Wildcats

Another Western Michigan wildcat test was dry in the Dundee formation when drilled in last week in Plainfield Township, Kent County, a few miles north of Grand Rapids.

It was F. Irwin Bryan and Harry T. Martin's No. 1 A. G. Aldrich, NE SW SW Section 3-8n-11w, which was dry at a total depth of 2,770 feet.

New Locations

Nine new permits for locations in five counties and six townships were issued last week by the state conservation department. Three were for new tests in Porter Township, Midland County, two in Denver Township, Isabella County, and one each in Greendale-Midland, Home-Montcalm, Ogemaw-Ogemaw and Duplaine-Clinton, the last two being wildcats and the others in proved territories.

Pure Oil Co. received permits for two new Porter tests, namely: No. 5 C. D. Alexander, NE NE NE Section 19-13n-1w and No. 5 Floyd Younglove, SW SW SW Section 17, while McClanahan Oil Co. took out a permit for the No. 3 Eliza Breu, NE NW SE Section 20.

Two new Denver-Isabella tests will be drilled as follows: Morris Oil & Gas Corp.'s No. 1 P. J. and Josephine Marthey, NW NE SE Section 19-15n-3w and the Chartiers Oil Co.'s No. 1 Edward Graham, SE SE SW Section 28-15n-3w.

Mid-State Development Co. received a permit for the No. 1 John Bolen, NW SW NE Section 16-14n-2w, Greendale Township, Midland County, while the Daily Crude Oil Co. will drill a No. 5 on the Mrs. Carey Christensen lease, SW NW NE Section 10-12n-6w, in the Home Township, Montcalm County Pool.

M. J. Ingold took a permit for the No. 1 Grover Zettle, SW SW SW Section 13-22n-1e, Ogemaw Township and County.

A new Clinton County test in a rank wildcat territory will be drilled by the Elba-Duplain Oil Syndicate of Elsie, on the Archie Stratton lease, NW NW NE Section 4-8n-1w, Duplaine Township.

CLASSIFIED ADVERTISING

Royalties—Production

NEW FEDERAL SECURITIES ACT SERVICE
Covers All Oil Royalty Offering Sheets and Working Interest Registrations Filed. Weekly Service Published in Washington where the Real News Originates. Send for Information Circular and Free Copy.
SECURITIES INFORMATION SERVICE, INC.
1020 Earle Building, Washington, D. C.

BETTER CLASS
MONTHLY PAYING ROYALTIES
Quoted Dealers Exclusively.
W. E. COOK
Suite 812, Palace Bldg., Tulsa, Okla.

PRODUCING OIL ROYALTIES
for dealers.
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood. P. O. Box 2261, Tulsa, Okla.

Producing Oil Royalties
at wholesale.
ROBERT L. KINKAID, INC.
Petroleum Bldg., Oklahoma City, Okla.

Income Producing Royalties
Mid-Continent Field
Harry A. George
427 Perrine Bldg., Oklahoma City, Okla.

ROYALTIES producing and nonproducing in Kansas, Oklahoma and Texas. James R. Haynes, Grantville, Kansas.

100 ACRES ROYALTY
TWO THOUSAND BARREL WELL
The 100 acres is under 640 acres. Has seventeen feet of producing sand and came in for two thousand bbls. It is the discovery well and the allowable is 150 bbls. per day. Price $150 per acre. The 100 acres to be sold as a whole.
10 ACRES ROYALTY
1500 BARREL WELL
The 10 acres is under an 80 acres with one well. There is no reason in my judgment why there should not be 7 more producing wells. Price $350 per acre.
DRILLING DEAL
Have large ranch in oil trend in vicinity of famous Government wells pool. Drilling deal to 3500 foot level with 7 to 9 potential pay sands. Can get one-half of royalty optional of taking it up if a new pool is found at $3.00 per acre base.
Want to deal with dealers and practical oil men. Can furnish good references. Wire or write me what you want.
W. D. McCOY
17 Years in Tulsa.
Ph. 2-4311 217 W. 5th Street.

CALIFORNIA
PRODUCING ROYALTIES
Grant Deed, Landowners, Gross Overriding, Participating
Nothing available today is comparable to
CALIFORNIA ROYALTY VALUES
Backed by fields with 100 to 4000 feet of producing zone, quicker payout, longer lived, greater recoverable value. We have good supply attractive royalties, real investments.
California Royalties are more correctly priced. Address: (P.R.) The Oil and Gas Journal, 313 Union Oil Building, Los Angeles, California.

DEALERS IN ODD LOTS
EAST TEXAS AND VAN POOL
PRODUCING OIL ROYALTIES.
We Buy and Sell.
E. T. MARION REAL ESTATE CO.
407 Southwestern Life Ins. Bldg.
Dallas, Texas.

VAN POOL OIL ROYALTY
Bought — Sold
Suite 810-67, Wall St., New York.

Royalties—Production

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

SELL ALL 8/8 mineral, oil, gas, carbon dioxide royalty, 5,000 acres block. Canadian Anticline, Wagon Mound, Mora County, New Mexico. Box 268, Las Vegas, New Mexico.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect St., East Orange, N. J.

J. A. WOLF AND COMPANY
105 West Adams Street
Chicago, Illinois
Dealers in Oil Royalties since 1918.

UNUSUAL DISCOVERIES at shallow levels being made in Archer and North Young Counties, Texas. I have several Blocks on good geology and desire to sell interest or acreage. Desire communicate with parties wanting to get in on new production.
B. H. HILBURN
915 Hamilton Bldg.,
Wichita Falls, Texas.

PRODUCING OIL ROYALTIES
Bought (Wholesale) Sold
Inquiries invited from Oil Companies, Bankers, Dealers.
M-K OIL COMPANY, INC.
20 Broad St. New York

BROKERS — SALESMEN
Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. Complete set of Forms and Reports for filing with Securities and Exchange Commission accompanies every order. Inquiries invited.
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

PRODUCING OIL ROYALTY,
BUCHANAN POOL
We offer subject to prior sale 7½ royalty acres, 30 acre lease, Medlen Farm, Buchanan Pool, Caldwell County, Texas. One producing well, earned $279.00 in 1933, $397.00 in 1934. Base price $265.00, total consideration $1985. January, 1935, earnings $35.37. Advise if interested in purchasing. Federal Trade Offering Sheet furnished on request.
J. F. MARION OIL COMPANY
MAGNOLIA BUILDING
DALLAS, TEXAS.

LAND in Fee, All royalty close in. 10 Acres up. Near new locations. Owner. Geo. W. Seckman. Edmond, Okla.

WILL SELL Oil Payment four for one out of one-eighth interest in proven location in Oklahoma City field. Well now rigged up. Must be immediate sale. 929 First Natl. Bank Bldg., Oklahoma City, Oklahoma.

Royalties—Production

Low priced leases Royalties near Permian Basin. Wildcats being drilled by Majors and Independents. 50 to 1 chance quick money. E Croft, Proctor, Texas.

PRODUCING OIL Royalty paying monthly income in half acres and upwards at reasonable prices. Federal listed. S. J. Jewell, P. O. Box 35, Tulsa, Okla.

HAVE FOR SALE, good producing royalties in Van and East Texas. Own and will sell twenty acre lease Upshur County, East Texas Field, offsetting well that came in January 24th making 1800 barrels a day. First well must be started within ninety days. Have for sale unproven royalty under major companies in line of development. $4.00 an acre. Rentals paying 6% on your money beside good speculative value. Will buy royalty in Texas and Oklahoma. Any amount. P. R. Knickerbocker 3237 Westminster, Dallas, Texas.

Financing

JAMES E. MILLER CO., 207½ E. Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Seventh Floor, 1237 Market St., Philadelphia, Pa.

Situations Wanted

ADVERTISING MAN with knowledge of producing, refining and marketing. Has 10 years' advertising experience with one of the largest electrical and mechanical machinery builders in the country. Can produce effective campaigns using direct mail, catalogs, magazines, displays, etc. Knows all trade papers thoroughly. Can fit into Oil Company, Machinery Builder, Supply House or Power Company, Advertising Department. Age 31, married, will go anywhere. Address Box G-550, The Oil and Gas Journal, Tulsa, Okla.

REFINERY COST AND YIELD ANALYST AND ACCOUNTANT seeks re-employment. Maintains comparative, constructive, process-criticism systems and incidental, current statistical record. Estimates value of Crudes and probable profit or loss in refining. EXPERIENCED SENIOR. Address Box G-572, The Oil and Gas Journal, Tulsa, Okla.

SALESMAN - CHEMIST. Young man seven years' experience Refinery, laboratory and Sales, covered jobber trade in five southwest states. Traveling Illinois and Indiana at present for major company. Desire change to the southwest. Sales or research chemist. Best of reference. Address Box G-571, The Oil and Gas Journal, Tulsa, Okla.

Pumping Station Engineer experienced with Diesel and Electrical equipment. Age 31. Will go anywhere. Address Box G-570, The Oil and Gas Journal, Tulsa, Okla.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Incorporations

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE CHARTERS — Fee small; submitted forms. Chas. G. Guyer, 901 Market Street, Wilmington, Del.

CLASSIFIED ADVERTISING

For Sale—Equipment

150—55,000; 37,500; 35,000 BBL. STEEL STORAGE TANKS

The largest stock of large storage tanks in the United States. Will quote prices, tanks cut down and re-erected any place in country or will make very attractive prices on sheets any thickness. All size tanks.

SONKEN-GALAMBA CORPORATION
64 North Second Street Kansas City, Kansas.

21 HIGH PRESSURE HAMMER-WELD TANKS

Same as new. Wall thickness ⅜ in.—head thickness ⅞ in.—Length 19 ft. 8 in. Diameter 4 ft. 2 in. Working pressure 150 pounds. Test pressure 300 pounds. Used until recently as gas receivers in a compression plant. Will sell individually or entire lot. Price slashed for immediate sale.

2—GALVANIZED IRON BUILDINGS

Splendid condition. Heavy gauge galvanized metal throughout. One 110 ft. x 40 ft.—the other 100 ft. x 50 ft. Ceiling height 20 ft. Gable roofs supported by heavy steel fabricated trusses. Ideal for manufacturing or warehouse use. Could be dismantled and loaded on cars at low figure.

500—8⅝-in. STANDARD DRESSER COUPLINGS

Thoroughly reconditioned and will render same service as NEW couplings. Complete with new bolts and new rubbers. Will sacrifice for prompt sale.

NOTE: We are continually dismantling refineries and plants of various types. See us for best proposition.

BROWN-STRAUSS CORPORATION
Pipe & Structural Steel—New & Reconditioned.
1402-1729 Guinotte Ave. Kansas City, Mo.

BARGAIN — Six Bessemer Air Compressors, Type 8, Sixty H.P. (13½"x20"), Direct Gas Driven equipped with following compression cylinders: 3 compressors 12½"x20", 1 compressor 14"x20", 2 compressors 6¼"x20", Extra Compression cylinders 2 — 6¼"x20", 1 — 12½"x20" Located El Dorado Field, Arkansas. Write P. A. H., 1104 Union Bank Bldg., Pittsburgh, Pa.

FOR SALE—Gasoline Plant (Natural Gas)—Capcy. 10,000 Gal. Also 2—600 HP Cooper Gas Engines. 3 complete air lift plants. 1 187½ KW Steam Turbine Direct connected to generator. 1 75, 1 150 Fairbanks-Morse Oil Engines with or without generators.
A. C. ASKEW,
3004 E. Archer St., Tulsa, Okla.

SECOND HAND CASING
All sizes. Complete Stocks New and Used drilling equipment.
IVERSON TOOL CO.
Box 1227, Tulsa, Okla., Ph. 4-9127

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

60 MILES of 3" line pipe, like new. Part of pipe 9 lb. tubing, stencil marks still legible. Price 18c per ft. f.o.b. cars Clarksburg. Wright Brothers, Clarksburg, W. Va.

FOR SALE—GAS METERS
150 25 lb. 60B Ironcase.
30 250 lb. 30B Ironcase.
List of other meters and prices on request. Geo. R. Milner, Okmulgee, Okla.

OIL WELL Electric Motors rewinding our specialty. Picked up and delivered. Rawls Electric Works, Abilene, Tex.

FOR SALE—Casing clamps, Clark and Bessemer 80-165 HP compressor cylinders, 4" cast iron companion flanges, acetylene generators, Robison orifice meters, and Chaplin-Fulton regulators. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE—Gaso Portable Pumping Unit, 3¼"x10" powered with Continental motor. General Machine & Supply Company, Wichita Falls, Texas.

FIVE 300-amp. engine-driven Lincoln welders. Also stock of electric motor-driven welders. Service Co., 3732 Cedar, Cleveland, Ohio.

Classified Rates

Classified Advertising rates are 35 cents a line for the first insertion and 25 cents a line for each additional insertion, PAYABLE IN ADVANCE.

Six words usually constitute a line.

Compute white space at line rate.

Minimum of three lines accepted.

	1 time	2 times	3 times	4 times
3 lines	$1.05	$1.80	$2.55	$3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

To avoid delay be sure to send remittance with copy. Over payments will be refunded. One time insertions will not be run until fully paid.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

For Sale—Equipment

Gas Engines: One 110 H.P. two Cylinder horizontal Bessemer $900, also 250 H.P. vertical Foose $1800. One 175 K.W. generator and switchboard $1000. Engines excellent condition and priced loaded on cars at Seller's Arkansas plant. Write F. S. Kelly, 949 Delaware, Shreveport, La.

Equipment Wanted

WANTED — Couplings, Thread Protectors—14" and larger. In good condition. Address Box G-561, The Oil and Gas Journal, Tulsa, Okla.

WANTED Natural Gasoline Outfit, prefer 60 HP, direct driven, low stage, comp. with house and all connections. Address Edw. Agon, Box 2, Winchester, Ky.

Leases—Production

Coastal Louisiana Leases, blocks, royalties in this very active area bought and sold. 208 Weber Bldg., Lake Charles, La.

PRODUCING LEASE INTEREST, BUCHANAN POOL

We offer subject to our confirmation ¼ working interest in a 30 acre lease, part of Medlen fee, Buchanan Pool, Caldwell County, Texas. One well, initial production 1050 barrels daily, Magnolia purchasing oil. This interest earned $2249.00 in 1933, $2785.00 in 1934, price $11,140.00. January, 1935, income $251.12. Federal Trade Offering Sheet furnished on request. Write or wire for further information.
J. F. MARION OIL COMPANY
MAGNOLIA BUILDING
DALLAS, TEXAS.

WILL lease 70 ac. 18-6n-2w and 100 ac. 11-6n-3w, McClain County, Okla. Joe P. Crawford, fee owner, Okla. City, Okla.

SEVERAL leases located near drilling well Brown County, Texas, on excellent structure approved by well known reputable geologists. The well is to be a thorough Ordovician test. P. O. Box 1801, Fort Worth, Texas.

ATTENTION Oil Men, Investors: For lease, sections 12 and 13, Block A-47, Andrews County, Texas. In the heart of development. Make me an offer, five or ten year lease, 25c rental, best offer takes it. Owner, 1611 Pierce St., Amarillo, Texas.

TREGO and Graham Co., Kansas, oil leases and royalties, at very low prices. J. E. LEADER, Wakeeney, Kansas.

OFFSET leases and royalty in the new Jackson County, Oklahoma, play. Hub of the State's new development in shallow production. Write for particulars. G. E. Fisher, 518 Key Bldg., Oklahoma City, Oklahoma.

Display Rates

Classified Display Advertising set in similar style to this Ad or in two-column style is as follows:

1 inch	1 time	$5.00
1 inch	13 times	4.50
1 inch	26 times	4.00
1 inch	52 times	3.50

PAYABLE IN ADVANCE
MONTHLY

One-point borders and 10-point capitals are allowed; larger type not accepted.

To avoid delay be sure to send remittance with copy. Over payments will be refunded. One time insertions will not be run until fully paid.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

Leases—Production

OPEN FOR LEASE, Sec. 12, Block A-48, Andrews Co., Tex. All inquiries promptly answered. Address D. N. Polson, 616 3rd St., Alton, Ill.

WILL SELL 10-year lease and one-fourth royalty under 7100 acres, all checker-boarded except 3000 acres solid, located Pittsburg County, Oklahoma. Major companies now playing this county. 929 First Natl. Bank Bldg., Oklahoma City, Oklahoma.

HAVE 2830 acres in Leflore County can sell at $2 per acre; 360 acres of which mineral rights reserved by Government; abstract shows good title and tax paid. Have 2570 acres in McCurtain County can sell $2.50 per acre; no reservations; abstract shows good title and tax paid; can deliver on short notice; both good oil and gas gamble.
LUTHER CALAHAN
Idabel, Oklahoma.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, N. Mex.

20-acre lease under well being drilled on structure and between production. Long lived wells at initial 5,000 bbls. per month from the 1,000-ft. horizon. Entire 20-ac. tract $1000 cash, and $5000 in oil. Will repay half cash if lease fails to produce. Nicolle, Box 903, Houston, Texas.

For Sale—Old, Settled Production and leases in constant operation Allen Co., Ky. A. K. Parsons, Saundersville, Tenn.

OIL DISCOVERED. Want party with capital to finance and develop well at once. S. W. CARLISLE, Salem, Neb.

PROVEN 10a OIL Lease in SE¼ 15-11N-3W, OC field, for a well and small oil payment. A. N. Wooldridge, 904 1st Natl. Bk. Bldg., Oklahoma City, Okla.

RIO Grande Valley Leases, Royalty, low price, near 4 completions. Huge activity planned, better hurry 50-1 chance for quick money. L. F. Bassett, Zapata, Tex.

WANTED—Financial help to develop sand and shale gas; several formations; shallow drilling; good market; own my drilling machines. H. W. Mitchell, Osawatomie, Kans.

FOR SALE, 5 Acre lease in Crockett County, Texas, Section 8, Block 2, near World Oil Pool. Make me offer.
MRS. THEO. BENSE
1541 Phillips Ave.,
Racine, Wisconsin.

For Sale—Maps

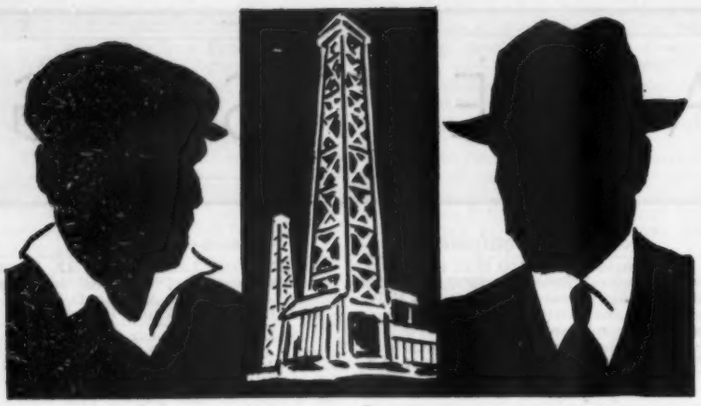
UP TO DATE oil map of New Mexico and late report on oil activities, 45c stamps. Fred Manley, Hobbs, N. Mex.

STATE OIL & GAS MAPS
Up to date drilling data on 10,000 WILDCAT WELLS
Kans., $6; Okla., $6; Ark., La., N.E. Tex., Gulf-S.W. Tex., West Tex. and Mont. $5 each; Panhandle Tex., Neb., So. Dak., Ala., Miss. and Wash., $2.50 each; Wyo., Colo., Utah and N. Mex., $3.50 each; Calif., $15.
CALIFORNIA MAP & BLUE PRINT CO.
1127 Story Bldg., Los Angeles, Calif.

OIL MAPS
The best ownership and general-area maps, large or small scale found in the oil industry; cover any active County or Parish or "hot spot" in Texas or Louisiana.
W. W. Zingery, Houston, Tex.
The World's Best Oil Map Maker.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.



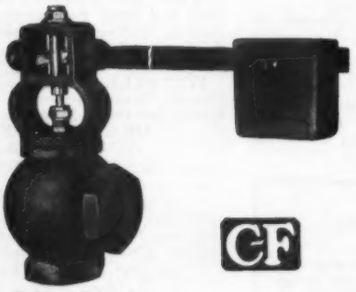
"From now on, Jim, put Reading Genuine Puddled Wrought Iron Tubular Goods in all 'hot spots'. That's the pipe that can take it, and it will save us plenty."

Write for details.

READING IRON COMPANY
PHILADELPHIA

SCIENCE AND INVENTION HAVE NEVER FOUND A SATISFACTORY SUBSTITUTE FOR GENUINE PUDDLED WROUGHT IRON

Can be set to blow at any desired pressure



Fulton Lever Safety Valve

SET the Fulton Lever Safety Valve at any pressure you desire, between 10 and 100 pounds, and when that pressure is reached the valve blows. Never sticks. Never fails. For low pressure distribution, it is advisable to have a safety valve between the high pressure and the low pressure regulators. For pressures between 5 and 100 pounds, the lever type here shown,—for pressures below 5 pounds, a C-F deadweight safety valve is recommended. Fulton Safety Valves, regulators, and other C-F equipment for gas control are of superior design and workmanship. They have been used with satisfaction for 40 years. Full information on request.

The Chaplin-Fulton Manufacturing Co.
28-40 Penn Avenue Pittsburgh, Pa.

Index to Advertisers

A
Abercrombie, J. S., Co. 89
Abercrombie Pump Co. 62
Air Reduction Sales Co. 1
Air Spray Painting Co., Inc. 89
Allegheny Steel Co. 104
Allsteel Products Mfg. Co., The 2
American Cable Co. .....
American Cast Iron Pipe Co. .....
American Iron & Machine Works Co. .....
American Meter Co. .....
American Steel & Wire Co. 86
Axelson Manufacturing Co. .....
B
Baash-Ross Tool Co. .....
Baker Oil Tools, Inc. 42
Baroid Sales Co. 55
Barrett Co., The .....
Barret, William M., Inc. .....
Bethlehem Steel Co. .....
Boston Woven Hose & Rubber Co. .. 48
Bowen Air Lines, Inc. 112
Braden Steel Corp. 60
Bradford Motor Works, Inc. .....
Brewster Co., Inc. 34
Bridgeport Machine Co. 41
Broderick & Bascom Rope Co. .....
Brown Instrument Co., The .....
Brown Strauss Corporation .....
Byron Jackson Co. .....
C
Cameron Iron Works, Inc. .... 63 and 89
Case, J. I., Co. .....
Caterpillar Tractor Co. Inside Front Cover
Chain Belt Co. .....
Champion Machine & Forging Co. ...
Chaplin-Fulton Mfg. Co., The 120
Chapman Valve Mfg. Co., The .....
Chemical Process Co., Inc., The .....
Chevrolet Motors Co. .....
Chicago Bridge & Iron Works .....
Cities Service Oil Co. .....
Clark Bros. Company 35
Classified Advertising 119
Cleveland Hardware & Forging Co., The .....
Combustion Engineering Co., Inc. .....
Continental Oil Co. .....
Continental Supply Co., The 32-B
Cooper-Bessemer Corp., The .....
Coppus Engineering Corp. .....
Corona Products, Inc. 61
Corbett Corporation, The 65
Crane Co. .....
Curtin, W. H., Co. 112
D
Darling Valve & Mfg. Co. .....
Dart, E. M., Mfg. Co. .....
Davis Regulator Co. .....
Dean Core Barrel Mfg. Sales & Service 95
Devine, J. P., Mfg. Co., Inc. .....
Doheny Stone Drill Co. .....
Dowell Incorporated 68
Dresser, S. R., Mfg. Co. .....
DuPont DeNemours & Co., Inc., E. I. 31
E
Eagle-Picher Lead Co. 3
Economy Electric Lantern Co. .....
Edward Valve & Mfg. Co., Inc., The.
Elliott Core Drilling Co. .....
Emsco Derrick & Equipment Co. .....
Everstick Anchor Co. .....
F
Fairbanks-Morse & Co. .....
Filtrol Co. of California .....
First National Bank of Ada, The ... 62
First National Bank & Trust Co. of Tulsa, The 57
Fisher Governor Co. .....
Fluid Packed Pump Co. 103
Four Wheel Drive Auto Co., The .....
Foxboro Co., The 71
Frick-Reid Supply Corporation 59
G
Gardner-Denver Co. 32-B
Garlock Packing Co., The .....
Gasc Pump & Burner Mfg. Company. 51
Gasoline Products Co., Inc. 21
Gates Rubber Co. .....
Gearench Mfg. Company 64
General American Transportation Corp. .....
General Electric Co. .....
General Motors Truck Co. .....
Gilbert & Barker Mfg. Co. .....
Goodyear Tire & Rubber Co., Inc. ...
Gott, H. P., Mfg. Co. .....
Grant Oil Tool Co. 91
Graver Tank & Mfg. Corp. .....
Great Lakes Fuel Corporation, Distributors for Great Lakes Coal & Coke Co. .....
Greenspon's Son, Jos., Pipe Corp. ....
Guiberson Corp., The .....
Gulf Refining Co. .....
H
Hagerling, Charles J. 65
Halliburton Oil Well Cementing Co. .
Hanlon-Buchanan, Inc. .... Front Cover
Harrisburg Pipe & Pipe Bending Co.
Heeter, C. M., Sons Co. .....
Heiland Research Corporation .....
Hercules Motors Corporation .....
Hewitt Rubber Corporation .....
Hills-McCanna Co. .....
Hinderliter Tool Company 53
Houston Oil Field Material Co., Inc... 89
Hughes Tool Co. ..... Back Cover
Humble Oil & Refining Co. .....
Hydril Co. .....
I
Illinois Steel Co. .....
Ingersoll-Rand Company .....
International Harvester Co. of America.
J
Jarecki Manufacturing Co. .....
Jenkins Bros. .....
Jergueon Gage & Valve Co. 80
Johns-Manville Corporation .....
J
Jones & Laughlin Steel Corp. .....
Jones Co., The S. M. .....
K
Kellogg, M. W., Co., The .....
Kennedy Valve Mfg. Co., The .....
Key Boiler Equipment Co. .....
L
Landis Machine Co., Inc. .....
Larkin Packer Co. .....
Leonard Construction Co. 102
Lincoln Electric Co., The .....
Linde Air Products Co., The 85
Link-Belt Company .....
Louisiana Supply Co. .....
Lucey Products Corp. .....
Ludlow Valve Mfg. Co., The .....
Lufkin Foundry & Machine Co. .....
Lummus Co., The .....
Lunkenheimer Co., The .....
Mc
McCord Radiator & Mfg. Co. .....
McEvoy, J. H., & Co. 64
M
MacClatchie Manufacturing Co. .....
Macwhyte Co. .....
Maloney Tank Mfg. Co. .....
Manhattan Rubber Mfg. Division, The
Martin-Decker Corp. .....
Mason-Neilan Regulator Co. 88
Mopham Corp., Geo. S. .....
Merco Nordstrom Valve Co. .....
Midwest Piping & Supply Co. .....
Miller, Max B., & Co., Inc. .....
Miller Sand Pump Co., The .....
Mission Mfg. Co. 89
Monsanto Chemical Company .....
Moore, Lee C., & Co., Inc. .....
Murray-Brooks Hdwe. Co., Ltd. .....
Muskogee Iron Works .....
N
National Bank of Tulsa 47
National Lead Co. .....
National Supply Co., The .....
National Tank Co. 56
National Transit Pump & Machine Co.
National Tube Co. 44
New Deal Specialty Co., Inc., The ...
Norvell-Wilder Supply Co. .....
Nugent & Co., Wm. W. .....
O
Oil Center Tool Co. 58
Oil Conservation Engineering Co. ...
Oil Equipment & Engineering Exposition .....
Oil Well Supply Co. .....
Oklahoma Gas & Electric Co. .....
Oklahoma State Bank 61
Oxweld Acetylene Co. 85
P
Parkersburg Rig & Reel Co., The ...
Parsons Co., The Ralph M. .....
Penberthy Injector Co. 17
Petroleum Building 81
Pittsburgh Equitable Meter 75
Pittsburgh Steel Company .....
Prest-O-Lite Co. 85
R
Reading Iron Co. 120
Reading, Pratt & Cady .....
Rector Well Equipment Co., Inc. 61
Reed Roller Bit Co. 38
Republic Rubber Co., The .....
Republic Steel Corp. (Upson Nut Division) .....
Republic Steel Corp. ..Inside Back Cover
Roebling's, John A., Sons Co. .....
Rubloff & Co., Arthur 81
Ryerson & Son, Inc., Joseph T. .....
S
Seismograph Service Corporation ....
Shaffer Tool Works 89
Shell Union Oil Corp. .....
Sherwin-Williams Company, The ....
Smooth-On Mfg. Co. .....
Snetcher & Pittman, Inc. .....
South Chester Tube Co. .....
Southern States Company, Inc., The.. 60
Spang, Chalfant & Co., Inc. .....
Sperry-Sun Well Surveying Co. 80
Staynew Filter Corp. .....
Supplementary Code Authority of the Wire Rope and Strand Manufacturing Industry .....
T
Taubman Supply Corp. 36
Taylor Forge & Pipe Works .....
Taylor Instrument Companies .....
Texas Iron Works 37
Thermoid Rubber Co., The .....
Timken Roller Bearing Co. .....
Timken Steel & Tube Co. 29
Tnemec Co., Inc. 67
Tretolite Co. .....
Tube Turns, Inc. .....
Twin Disc Clutch Co. .....
U
Union Carbide & Carbon Co. 85
Union Carbide Sales Co. 85
Union Wire Rope Corp. .....
U. S. Steel Corp. Subsidiaries.. 44 and 86
Universal Motor Co. 80
Universal Oil Products Co. 19
Utility Trailer Manufacturing Co. ...102
V
Vellumoid Co., The .....
Vogt, Henry, Machine Co. 82
W
Walworth Co. .....
Warren Petroleum Co. .....
Waukesha Motor Company .....
Well Machinery & Supply Co. .....
Williams & Co., C. K. .....
Williams & Co., J. H. .....
Williamsport Wire Rope Co. .....
Wilson Supply Co. .....
W. K. M. Co., Inc. .....
Wyatt Metal & Boiler Works .....
Y
Youngstown Sheet & Tube Co., The.32-A